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STRUCTURE FILE UPDATES: 17 MAY 2010 HIGHEST RN 1224322-63-7
 DICTIONARY FILE UPDATES: 17 MAY 2010 HIGHEST RN 1224322-63-7

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L2	1	SEA FILE=REGISTRY	SPE=ON	ABB=ON	PLU=ON	7439-98-7/RN
L3	1	SEA FILE=REGISTRY	SPE=ON	ABB=ON	PLU=ON	7440-50-8/RN
L4	1	SEA FILE=REGISTRY	SPE=ON	ABB=ON	PLU=ON	12668-36-9/RN
L5	761	SEA FILE=REGISTRY	SPE=ON	ABB=ON	PLU=ON	CU.SN/MF
L7	327	SEA FILE=REGISTRY	SPE=ON	ABB=ON	PLU=ON	L5 AND 1-13 SN/MAC
L8	1690	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L7
L9	140963	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L2
L10	628571	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L3
L11		QUE SPE=ON	ABB=ON	PLU=ON	SOLDERING? OR WELDING? OR BR AZING?	
L12	71	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L8 AND L11
L13	56	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L12 AND (1840-2005) /PRY,AY,PY
L14	2129	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L4
L15	193	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L14 AND L11
L16	5	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L15 AND L9 AND L10
L17	20277	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	"ELECTRONIC PACKAGES"+PFT,NT/CT
L18	6960	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	"HEAT SINKS"+PFT,N T/CT
L19	1	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L13 AND (L17 OR L18)
L20	0	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L13 AND HEAT SINK?
L21	1	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L13 AND ELECTRONIC PACKAG?
L22		QUE SPE=ON	ABB=ON	PLU=ON	FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR OVERLAID? OR LAMIN? OR LAMEL? OR (MULTILA YER?) OR SHEET? OR LEAF? OR FOIL? OR COAT? OR TOPCOAT? OR OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR	

		ENCAS?	OR ENWRAP?	OR OVERSPREAD?		
L23	28	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L13 AND L22
L24	61	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L13 OR L16 OR (L19 OR L20 OR L21) OR L23
L25	15	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L24 AND ELECTRIC?/ SC, SX
L26	127	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L15 AND L22
L27	82	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L26 AND (1840-2005) /PRY, AY, PY
L28	60	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L27 AND ELECTRIC?/ SC, SX
L29	60	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L28 AND L22
L30	15	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L29 AND (L17 OR L18)
L31	3	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L30 AND HEAT SINK?
L32	15	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	(L30 OR L31)
L33	29	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L25 OR L32
L37	20970	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	SOLDERING+PFT, NT/C T
L38	15	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L8 AND L37
L39	82910	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	WELDING+PFT, NT/CT
L40	27	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L8 AND L39
L41	42	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L38 OR L40
L42	35	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L41 AND (1840-2005) /PRY, AY, PY
L43	7	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L42 AND ELECTRIC?/ SC, SX
L44	29	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L33 OR L43
L45	1	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L42 AND ELECTRONIC (2A) PACKAG?
L46	29	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L44 OR L45
L47	19	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L42 AND PROC/RL
L48	44	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L46 OR L47
L49	31	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L48 AND L22
L50	44	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L48 OR L49
L51	23	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L50 AND (L9 OR L10)
L52	44	SEA FILE=HCAPLUS	SPE=ON	ABB=ON	PLU=ON	L50 OR L51

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 13:46:52 ON 18 MAY 2010

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FILE COVERS 1907 - 18 May 2010 VOL 152 ISS 21

10/566,721

FILE LAST UPDATED: 17 May 2010 (20100517/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Apr 2010
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Feb 2010

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2010.

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This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> d 152 1-44 ibib ed abs hitstr hitind

L52 ANSWER 1 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2008:1301449 HCAPLUS Full-text
DOCUMENT NUMBER: 149:522876
TITLE: Method for bonding electronic components finished
with electroless NiXP for preventing brittle
fracture of solder joints
INVENTOR(S): Yu, Jin; Jang, Dong-Min; Jee, Young-Kun
PATENT ASSIGNEE(S): Korea Advanced Institute of Science and
Technology, S. Korea
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20080265006	A1	20081030	US 2007-878173	20070720
KR 2008096264	A	20081030	KR 2007-41498	20070427
KR 876646	B1	20090109		
JP 2008285752	A	20081127	JP 2008-111954	20080423
PRIORITY APPLN. INFO.:			KR 2007-41498	A 20070427

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 30 Oct 2008

AB A method for bonding electronic components finished with electroless NiXP
layer for preventing a brittle solder joint fracture is provided with the
steps comprising: forming an electroless NiXP metal layer on a metal
deposition of electronic components, wherein X is selected from the group
consisting of W, Mo, Co, Ti, Zr, Zn, V, Cr, Fe, Nb, Re, Mn, Tl and Cu; and
reflowing a Pb-free solder on the electroless NiXP layer to be bonded. X
element was suppressed the formation of Ni₃P, Ni₃SnP intermetallic compound
and prevented the spalling behavior of Ni₃Sn₄. Therefore, solder joint
reliability can be improved significantly.

IT ~~7439-98-7D~~, Molybdenum, salts ~~7440-50-8D~~,
Copper, salts

(bonding electronic components finished with electroless
nickel-phosphorus-metal alloy for preventing brittle fracture of
solder joints)

RN 7439-98-7 HCAPLUS

CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
 CN Copper (CA INDEX NAME)

Cu

IT ~~12668-36-9~~
 (bonding electronic components finished with electroless
 nickel-phosphorus-metal alloy for preventing brittle fracture of
 solder joints)
 RN 12668-36-9 HCAPLUS
 CN Copper alloy, nonbase, Cu, Sn (CA INDEX NAME)

Component	Component Registry Number
=====+=====	
Cu	7440-50-8
Sn	7440-31-5

IT 7439-98-7, Molybdenum, uses 7440-50-8, Copper,
 uses
 (nickel-phosphorus alloy component; bonding electronic components
 finished with electroless nickel-phosphorus-metal alloy for
 preventing brittle fracture of solder joints)
 RN 7439-98-7 HCAPLUS
 CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
 CN Copper (CA INDEX NAME)

Cu

INCL 228203000
 CC 76-2 (Electric Phenomena)
 Section cross-reference(s): 48, 56
 IT Coating process
 Electronic packages
 Printed circuit boards
 Semiconductor devices
 Soldering
 Solders

Wetting agents

(bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)

IT Coating process

(electroless; bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)

IT Coating materials

(oxidation-resistant; bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)

IT Soldering

(reflow; bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)

IT 7439-89-6D, Iron, salts 7439-96-5D, Manganese, salts
~~7439-98-7D~~, Molybdenum, salts 7440-03-1D, Niobium, salts
 7440-15-5D, Rhenium, salts 7440-28-0D, Thallium, salts 7440-32-6D,
 Titanium, salts 7440-33-7D, Tungsten, salts 7440-47-3D, Chromium,
 salts 7440-48-4D, Cobalt, salts ~~7440-50-8D~~, Copper,
 salts 7440-62-2D, Vanadium, salts 7440-66-6D, Zinc, salts
 7440-67-7D, Zirconium, salts

(bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)

IT 7440-05-3, Palladium, processes 7440-57-5, Gold, processes
 11125-88-5 11144-61-9 11149-64-7 ~~12668-36-9~~
 12713-30-3 53024-37-6 63807-21-6 80476-08-0 81424-86-4
 108856-99-1 519169-19-8 538374-77-5 680610-24-6, Beryllium,
 silver, tin

(bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)

IT 7439-89-6, Iron, uses 7439-96-5, Manganese, uses ~~7439-98-7~~
 , Molybdenum, uses 7440-03-1, Niobium, uses 7440-15-5, Rhenium,
 uses 7440-28-0, Thallium, uses 7440-32-6, Titanium, uses
 7440-33-7, Tungsten, uses 7440-47-3, Chromium, uses 7440-48-4,
 Cobalt, uses ~~7440-50-8~~, Copper, uses 7440-62-2,
 Vanadium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses
 (nickel-phosphorus alloy component; bonding electronic components
 finished with electroless nickel-phosphorus-metal alloy for
 preventing brittle fracture of solder joints)

L52 ANSWER 2 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:1114883 HCAPLUS Full-text

DOCUMENT NUMBER: 147:396829

TITLE: Multilayer laminated probe pin
 and probe card bonded with lead-free solders

INVENTOR(S): Yamamoto, Shinichi

PATENT ASSIGNEE(S): Toshiba Corp., Japan; Toshiba Materials Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 11pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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10/566,721

JP 2007256078 A 20071004 JP 2006-80848 20060323
PRIORITY APPLN. INFO.: JP 2006-80848 20060323

ED Entered STN: 04 Oct 2007

AB The multilayer laminated probe pin comprises (A) a center member coated with (B) a dielec. layer and (C) an elec. conductive metal layer having surface roughness (Ra) $\leq 30 \mu\text{m}$ and (D) bearing an elec. conductive thin film at least on a part of C, preferably, on a part for bonding with a probe card. Preferably, A comprises a metallic material based on ≥ 1 kinds selected from W, Mo, Re, Ta, Nb, Au, Ag, Pt, Ni, Co, and Cu. Preferably, D comprises a metallic material based on ≥ 1 kinds Sn, Au, Ag, Pt, Ni, and Cu. Preferably, B is bonded with C by caulking, epoxy fusing, shrink fitting, or brazing. Preferably, D is deposited by plating.

IT 12668-36-9
 (Pb-free solder; multilayer laminated probe pin
 and probe card bonded with lead-free solders)

RN 12668-36-9 HCAPLUS

CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component Component
 Registry Number

=====+=====

 Cu 7440-50-8
 Sn 7440-31-5

IT 7439-98-7, Molybdenum, uses 7440-50-8, Copper,
 uses
 (elec. conductive layer; multilayer
 laminated probe pin and probe card bonded with lead-free
 solders)

RN 7439-98-7 HCAPLUS

CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

CC 76-14 (Electric Phenomena)
ST elec conductive metal layer probe pin; multilayer
 laminated probe pin probe card lead free solder
IT Epoxy resins, uses
 (adhesive; multilayer laminated probe pin and
 probe card bonded with lead-free solders)
IT Solders
 (lead-free; multilayer laminated probe pin and
 probe card bonded with lead-free solders)
IT 12668-36-9
 (Pb-free solder; multilayer laminated probe pin

and probe card bonded with lead-free solders)

IT 11125-21-6
(center member; multilayer laminated probe pin
and probe card bonded with lead-free solders)

IT 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses
7440-03-1, Niobium, uses 7440-06-4, Platinum, uses 7440-15-5,
Rhenium, uses 7440-22-4, Silver, uses 7440-25-7, Tantalum, uses
7440-31-5, Tin, uses 7440-33-7, Tungsten, uses 7440-48-4, Cobalt,
uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses
12597-71-6, Brass, uses
(elec. conductive layer; multilayer
laminated probe pin and probe card bonded with lead-free
solders)

L52 ANSWER 3 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:929899 HCAPLUS Full-text

DOCUMENT NUMBER: 147:267044

TITLE: Hermetically sealing a package to include a
barrier metal and a highly accurate sealing frame
to give packages with excellent seals and bonds

INVENTOR(S): Murata, Koji; Iwamoto, Takashi; Horiguchi, Hiroki;
Kubo, Ryuichi; Fujii, Hidetoshi; Aizawa, Naoko

PATENT ASSIGNEE(S): Murata Manufacturing Co., Ltd., Japan

SOURCE: U.S., 27pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 7259032	B2	20070821	US 2003-713253	20031117
			<--	
PRIORITY APPLN. INFO.:			JP 2002-341763	A 20021126
			<--	
			JP 2003-344041	A 20031002
			<--	

ED Entered STN: 22 Aug 2007

AB A method for manufacturing an electronic device includes the steps of forming
a 1st resist pattern on a primary surface of a SAW element, the 1st resist
pattern having openings at positions corresponding to those at which bumps and
a sealing frame are to be formed, sequentially forming metals over the 1st
resist pattern, the metals being formed into adhesion layers, barrier metal
layers, and solder layers, removing the 1st resist pattern on the SAW element
such that the bumps and the sealing frame are simultaneously formed. When the
bumps and the sealing frame of the SAW element are bonded to bond electrodes
of the bond substrate, the solder layers are melted and alloyed by heating.

IT 7440-50-8, Copper, processes 12668-36-9
(hermetically sealing package to include barrier metal and highly
accurate sealing frame to give packages with excellent seals and
bonds)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

RN 12668-36-9 HCAPLUS
 CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component Component
 Registry Number

=====+=====

Cu 7440-50-8
 Sn 7440-31-5

INCL 438026000; 257684000; 257-E21.513

CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 48, 56

IT Acoustic devices
 Adhesive films
 Alloying
 Bump contacts
 Diffusion barrier
 Electronic packages
 Electronic packaging process
 Heat treatment
 Joining
 Lithography
 Soldering
 Surface acoustic wave devices
 (hermetically sealing package to include barrier metal and highly accurate sealing frame to give packages with excellent seals and bonds)

IT 7440-02-0, Nickel, processes 7440-22-4, Silver, processes
 7440-32-6, Titanium, processes 7440-50-8, Copper,
 processes 7440-57-5, Gold, processes 11110-87-5 11124-13-3
 11125-88-5 11144-61-9 12019-61-3 ~~12668-36-9~~
 12713-30-3 12785-33-0 37255-79-1 39460-91-8 51603-53-3
 71818-44-5
 (hermetically sealing package to include barrier metal and highly accurate sealing frame to give packages with excellent seals and bonds)

IT 7727-37-9, Nitrogen, uses 7782-44-7, Oxygen, uses
 (soldering atmospheric; hermetically sealing package to include barrier metal and highly accurate sealing frame to give packages with excellent seals and bonds)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
 RE FORMAT

L52 ANSWER 4 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:17701 HCAPLUS Full-text

DOCUMENT NUMBER: 146:91611

TITLE: Ball-limiting metallurgies, solder bump
 compositions used therewith, packages assembled
 thereby, and methods of assembling same

INVENTOR(S): Hua, Fay; Wu, Albert T.; Jeng, Kevin; Seshan,
 Krishna

PATENT ASSIGNEE(S): Intel Corporation, USA

SOURCE: U.S. Pat. Appl. Publ., 18 pp.
 CODEN: USXXCO

DOCUMENT TYPE: Patent
 LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20070004086	A1	20070104	US 2005-173238	20050630
			<--	
US 7314819	B2	20080101		
US 20070284741	A1	20071213	US 2007-840269	20070817
			<--	
PRIORITY APPLN. INFO.:			US 2005-173238	A3 20050630
			<--	

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 05 Jan 2007

AB The invention relates to elec. connection technol. In particular, it relates to a ball-limiting metallurgy, a solder-bump metallurgy, and a package achieved thereby. A ball-limiting metallurgy (BLM) stack is provided for an elec. device. The BLM stack resists Sn migration toward the metalization of the device. A solder system is also provided that includes a eutectic-Pb solder on a substrate that is mated to a high-Pb solder, and that withstands higher temperature reflows and other higher temperature processes.

IT 7440-50-8, Copper, uses
(die layer coupled to a solder bump)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

IT 12668-36-9
(intermetallic upper layer below and on metal
layer of electronic package)

RN 12668-36-9 HCAPLUS

CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
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Cu	7440-50-8
Sn	7440-31-5

INCL 438108000

CC 76-3 (Electric Phenomena)

ST ball limiting metallurgy solder bump laminated metal layer

IT Laminated materials

(Al/refractory metal/V die metallurgy for forming solder bumps)

IT Bump contacts

Electronic packages

Electronic packaging process

(ball-limiting metallurgies, solder bump compns. used therewith, packages assembled thereby, and methods of assembling same)

IT Refractory metals

(laminated layer in ball-limiting metallurgies)

IT Soldering

(reflow; ball-limiting metallurgies, solder bump compns. used therewith, packages assembled thereby, and methods of assembling same)

IT 7440-50-8, Copper, uses

(die layer coupled to a solder bump)

IT 12668-36-9
(intermetallic upper layer below and on metal layer of electronic package)

IT 7429-90-5, Aluminum, uses
(laminated layer in ball-limiting metallurgies)

IT 7440-62-2, Vanadium, uses
(laminated metal-vanadium layer in ball-limiting metallurgies for solder bumps)

IT 7440-32-6, Titanium, uses 65453-97-6, NiV
(refractory metal in laminated metal-vanadium metal layer)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 5 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:1153694 HCAPLUS Full-text

DOCUMENT NUMBER: 145:464285

TITLE: Solder deposition on wafer backside for thin-die thermal interface material

INVENTOR(S): Lu, Daoqiang

PATENT ASSIGNEE(S): Intel Corporation, USA

SOURCE: U.S. Pat. Appl. Publ., 15pp.
CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20060244148	A1	20061102	US 2005-116554	20050428
			<--	
US 7288438	B2	20071030		
US 20080191358	A1	20080814	US 2007-770981	20070629
			<--	
PRIORITY APPLN. INFO.:			US 2005-116554	A3 20050428
			<--	

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 02 Nov 2006

AB A thermal interface solution is often needed to allow the die to reject heat more efficiently. A solder is deposited on the backside of a wafer. The wafer can be pre-deposited with a barrier layer such as a Ti base and other materials. Deposition is carried out by electroplating, electroless plating, CVD, and phys. vapor deposition. The solder-deposited die is bonded with a heat spreader that did not require a pre-deposited solder.

IT 12668-36-9
(solder; solder deposition on wafer backside for thin-die thermal interface material of packages)

RN 12668-36-9 HCAPLUS

CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
=====+	=====
Cu	7440-50-8
Sn	7440-31-5

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INCL 257772000; 257782000; 257712000; 257720000; 438122000; 438612000
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 48
IT Coating process
    (electroless; solder deposition on wafer backside for thin-die
    thermal interface material of packages)
IT Adhesive films
    Coating process
    Cutting
    Diffusion barrier
    Electrodeposition
    Electronic packaging process
        Heat sinks
        Lamination
        Soldering
    Solders
        (solder deposition on wafer backside for thin-die thermal interface
        material of packages)
IT 7440-31-5, Tin, processes 7440-57-5, Gold, processes 7440-74-6,
    Indium, processes 11124-13-3 12668-36-9 12727-40-1,
    Gold 80, tin 20 12785-33-0 101922-48-9 110092-93-8
    (solder; solder deposition on wafer backside for thin-die thermal
    interface material of packages)
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS
    RECORD (2 CITINGS)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR
    THIS RECORD. ALL CITATIONS AVAILABLE IN THE
    RE FORMAT

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L52 ANSWER 6 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:1098045 HCAPLUS Full-text
DOCUMENT NUMBER: 145:447447
TITLE: Fan out type wafer level package structure and
method of the same
INVENTOR(S): Yang, Wen-Kun
PATENT ASSIGNEE(S): Advanced Chip Engineering Technology, Inc., Taiwan
SOURCE: U.S. Pat. Appl. Publ., 13pp., Cont.-in-part of
U.S. Ser. No. 725,933.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 20060231958	A1	20061019	US 2006-456141	20060707
			<--	
US 7514767	B2	20090407		
US 20050124093	A1	20050609	US 2003-725933	20031203
			<--	
US 7459781	B2	20081202		
PRIORITY APPLN. INFO.:			US 2003-725933	A2 20031203
			<--	

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 20 Oct 2006

AB To pick and place standard dice on a new base for obtaining an appropriate and wider distance between dice than the original distance of dice on a wafer. The package structure has a larger size of balls array than the size of the

die by fan out type wafer level package. Also, the die may be packaged with passive components or other dice with a side by side structure or a stacking structure.

IT 7440-50-8, Copper, processes 12668-36-9
 (fan out type wafer level package structure and method of its manufacture)
 RN 7440-50-8 HCAPLUS
 CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
 CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

INCL 257777000

CC 76-3 (Electric Phenomena)

IT Films
 (elec. conductive; fan out type wafer level package structure and method of its manufacture)

IT Contact holes
 Cutting
 Dielectric films
 Electric contacts
 Electronic packages
 Electronic packaging process
 Interconnections, electric
 Lamination
 Semiconductor device fabrication
 Soldering
 Solders
 (fan out type wafer level package structure and method of its manufacture)

IT Electric conductors
 (films; fan out type wafer level package structure and method of its manufacture)

IT 7440-02-0, Nickel, processes 7440-32-6, Titanium, processes
 7440-50-8, Copper, processes 7440-57-5, Gold, processes
 11099-27-7 11136-88-2 11148-32-6 12647-03-9 12668-36-9
 39332-67-7, Kovar 39362-79-3, Alloy 42 39428-04-1
 (fan out type wafer level package structure and method of its manufacture)

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 7 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:1037669 HCAPLUS Full-text

DOCUMENT NUMBER: 145:367984

TITLE: Electronic package sealing by soldering
 with Pb-free high melting solders

10/566,721

INVENTOR(S): Terakawa, Toshiro; Noshiro, Keishi
 PATENT ASSIGNEE(S): Yoshikawa Kogyo Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8pp.
 CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2006269970	A	20061005	JP 2005-89445	20050325

<--

PRIORITY APPLN. INFO.: JP 2005-89445 20050325

<--

ED Entered STN: 06 Oct 2006

AB The title package sealing process involves ~~soldering~~ on a metal lid with Cu and Sn films (thickness 5-20 μ m), closing a ceramic hollow package with the Cu/Sn-soldered lid, and heating at \geq m.p. of Sn to form a Cu-Sn alloy and consequently sealing the lid on the package opening. The process provides easy and low cost alloying, ~~soldering~~, and sealing the package with the lid.

IT 7440-50-8, Copper, reactions
 (solder alloy formation with Sn; electronic package sealing by
~~soldering~~ with Pb-free high melting solders)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

IT 12668-36-9P
 (solder formation; electronic package sealing by ~~soldering~~
 with Pb-free high melting solders)

RN 12668-36-9 HCAPLUS

CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component Component
 Registry Number

=====+=====

Cu 7440-50-8

Sn 7440-31-5

CC 76-2 (Electric Phenomena)
 Section cross-reference(s): 56, 57

ST copper tin alloy solder ~~soldering~~ electronic ceramic package
 sealing

IT ~~Electronic packages~~
 Sealing
~~Soldering~~

(electronic package sealing by ~~soldering~~ with Pb-free
 high melting solders)

IT Ceramics
 (electronic package; electronic package sealing by
~~soldering~~ with Pb-free high melting solders)

IT Solders
 (formation, for Cu-Sn solder; electronic package sealing by

soldering with Pb-free high melting solders)
 IT 7440-31-5, Tin, reactions
 (solder alloy formation with Cu; electronic package sealing by
 soldering with Pb-free high melting solders)
 IT 7440-50-8, Copper, reactions
 (solder alloy formation with Sn; electronic package sealing by
 soldering with Pb-free high melting solders)
 IT 12668-36-9P
 (solder formation; electronic package sealing by soldering
 with Pb-free high melting solders)

L52 ANSWER 8 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:151229 HCAPLUS Full-text

DOCUMENT NUMBER: 144:203760

TITLE: Heat sink member for
 electronic package and method for manufacture
 thereof

INVENTOR(S): Shiomi, Kazuhiro; Ishio, Masaaki; Hasegawa,
 Tsuyoshi

PATENT ASSIGNEE(S): Neomax Materials Co., Ltd., Japan

SOURCE: PCT Int. Appl., 29 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006016479	A1	20060216	WO 2005-JP13705	20050727
<--				
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 4350753	B2	20091021	JP 2006-531412	20050727
<--				
US 20060244125	A1	20061102	US 2006-566721	20060202
<--				
PRIORITY APPLN. INFO.:			JP 2004-233777	A 20040810
<--				
			WO 2005-JP13705	W 20050727
<--				

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 17 Feb 2006

AB A heat sink member which has a mating material comprising Cu as a main component, a substrate comprising Mo as a main component and, arranged between the mating material and the substrate, a brazing layer comprising a Sn-Cu alloy (Sn: 1 to 13 mass %) for joining the mating material and the substrate. The heat sink member allows the inhibition of the occurrence of cracking or crazing during the production thereof, the inhibition of the increase of a

thermal expansion coefficient, and also the inhibition of the lowering of thermal conductivity

IT 7439-98-7, Molybdenum, processes 7440-50-8,
Copper, processes 12668-36-9
(Cu-Mo heat sink for electronic package)
RN 7439-98-7 HCAPLUS
CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

=====+=====

Cu 7440-50-8
Sn 7440-31-5

CC 76-3 (Electric Phenomena)
Section cross-reference(s): 56
ST copper molybdenum heat sink electronic package
IT Electronic packages
Heat sinks
(Cu-Mo heat sink for electronic package)
IT 7439-98-7, Molybdenum, processes 7440-50-8,
Copper, processes 12668-36-9
(Cu-Mo heat sink for electronic package)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L52 ANSWER 9 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:1317992 HCAPLUS Full-text
DOCUMENT NUMBER: 144:223851
TITLE: Ultrathin soldered flip chip interconnections on flexible substrates
AUTHOR(S): Pahl, Barbara; Loeher, Thomas; Kallmayer, Christine; Aschenbrenner, Rolf; Reichl, Herbert
CORPORATE SOURCE: Research Center of Microperipheric Technologies, Technical University of Berlin, Berlin, D-13355, Germany
SOURCE: Proceedings - Electronic Components & Technology Conference (2004), 54th(Vol. 2), 1244-1250
CODEN: PETCES
PUBLISHER: Institute of Electrical and Electronics Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 19 Dec 2005

AB Flip chip assembly of Si IC's on flexible substrates has gained more interest in the last years. On the one hand there are numerous low cost applications for this technol. such as smart cards and smart labels, however, flexible substrates offer a wide potential for highly complex folded packages and 3-dimensional modules. Using conventional flip chip assembly processes the stand-off is too high compared to the dimensions of chip and substrate. Until now solder application by stencil printing is only used successfully down to 150 μm pitch with bump heights larger than 70 μm due to the solder paste and stencil features. Deposition technologies for smaller solder vols. together with new assembly processes have to be developed and qualified to realize suitable contact heights. With the immersion ~~soldering~~ process a cost effective massless bumping process for thin solder ~~layers~~ was developed. Thermode bonding was studied as a promising fast flip chip technol. for thin soldered contacts on flexible substrates. The process development for 2 different solder materials in combination with no-flow under-filler materials will be presented for flip chip contacts of <10 μm height. The reliability of thin solder joints is a key issue. Therefore, the failure mechanisms and the ageing behavior were studied. The intermetallic phase formation has a larger influence because the intermetallics consume the majority of the solder alloy. The effect of intermetallic growth for the different solder materials as well as the impact of the small stand-off during ageing are studied. Special emphasis is put on failures resulting from the joint geometry of ultrathin contacts. The promising results of a reliability test program consisting of thermal cycling, temperature/humidity testing and multiple reflow tests are discussed.

IT 12668-36-9

(ultrathin soldered flip chip interconnections on flexible substrates)

RN 12668-36-9 HCAPLUS

CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component Component
Registry Number

=====+=====

Cu 7440-50-8

Sn 7440-31-5

CC 76-14 (Electric Phenomena)

IT Electronic packages

(integrated circuits; ultrathin soldered flip chip interconnections on flexible substrates)

IT 7440-22-4, Silver, uses 11110-87-5 11144-61-9 12044-91-6

12202-01-6 12668-36-9 12670-46-1

(ultrathin soldered flip chip interconnections on flexible substrates)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 10 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:1130085 HCAPLUS Full-text

DOCUMENT NUMBER: 143:414520

TITLE: Electronic chip components provided with external contacts for packaging by ~~soldering~~ connection

INVENTOR(S): Iemura, Tsutomu
 PATENT ASSIGNEE(S): Kyocera Corp., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2005294618	A	20051020	JP 2004-108879	20040401
			<--	
PRIORITY APPLN. INFO.:			JP 2004-108879	20040401
			<--	

ED Entered STN: 21 Oct 2005

AB The external contacts for the title components such as laminated chip capacitors comprise (1) a conductive Ni-plating sublayer, (2) a Sn-containing 1st plating layer formed on the sublayer, and (3) a 2nd plating layer (thickness 0.01-0.05 μ m) as a surface layer having m.p. lower than that of the 1st plating layer. The laminated contacts give the chips good solder-wettability without chip-standing-up problems.

IT 12668-36-9
 (surface layer, for external contact, for soldering; electronic chip components provided with external contacts for packaging by soldering connection)

RN 12668-36-9 HCAPLUS

CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
=====	=====
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01G004-12

ICS H01G004-252; H01G004-30

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 56

ST nickel plating sublayer external contact chip capacitor; tin plating intermediate layer external contact chip capacitor; surface plating low melting surface layer soldering wettability

IT Electric apparatus
 (chip component; electronic chip components provided with external contacts for packaging by soldering connection)

IT Capacitors
 (chip-type, external contact multilayer; electronic chip components provided with external contacts for packaging by soldering connection)

IT Electric contacts
 (external, multilayer; electronic chip components provided with external contacts for packaging by soldering connection)

IT Wettability
 (soldering; electronic chip components provided with external contacts for packaging by soldering connection)

IT Soldering
 (wettability, elec. contacts for; electronic chip components provided with external contacts for packaging by soldering)

connection)
 IT 7440-31-5, Tin, properties
 (intermediate layer for external contact; electronic chip
 components provided with external contacts for packaging by
 soldering connection)
 IT 7440-02-0, Nickel, properties
 (sublayer for external contact; electronic chip components provided
 with external contacts for packaging by soldering
 connection)
 IT 12668-36-9
 (surface layer, for external contact, for
 soldering; electronic chip components provided with
 external contacts for packaging by soldering connection)

L52 ANSWER 11 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:975701 HCAPLUS Full-text

DOCUMENT NUMBER: 143:276738

TITLE: Method of manufacturing a connection between
 several polymer-insulated conductors

INVENTOR(S): Blind, Sven; Woerner, Norbert; Konrad, Rainer

PATENT ASSIGNEE(S): Minebea Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 6 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
EP 1571731	A1	20050907	EP 2005-3715	20050222
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
DE 102004010723	A1	20050922	DE 2004-102004010723	20040305
PRIORITY APPLN. INFO.:			DE 2004-102004010723A	20040305

ED Entered STN: 08 Sep 2005

AB The discovery concerns a method for the fabrication of an elec. interconnect
 between several polymer insulated elec. conductors. The non-insulated end of
 the conductor is enclosed in a metal sheath and the ends lie parallel to each
 other. The metal houses are joined by welding.

IT 7439-98-7, Molybdenum, processes 7440-50-8,
 Copper, processes 12668-36-9
 (manufacturing connection between several polymer-insulated conductors)

RN 7439-98-7 HCAPLUS

CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
 CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component Component
 Registry Number

=====+=====

Cu	7440-50-8
Sn	7440-31-5

IC ICM H01R004-02
 CC 76-2 (Electric Phenomena)
 Section cross-reference(s): 38, 48
 ST connection welding metal conductor polymer insulator
 IT Electric cables
 Electric conductors
 Welding of metals
 (manufacturing connection between several polymer-insulated conductors)
 IT 7439-98-7, Molybdenum, processes 7440-02-0, Nickel,
 processes 7440-50-8, Copper, processes 12597-69-2,
 Steel, processes 12668-36-9
 (manufacturing connection between several polymer-insulated conductors)
 REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
 RE FORMAT

L52 ANSWER 12 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2005:693284 HCAPLUS Full-text
 DOCUMENT NUMBER: 144:296469
 TITLE: Effect of weld metal copper content on HAZ
 cracking in austenitic stainless steel welded with
 Al brass
 AUTHOR(S): Lee, H. W.; Sung, J. H.
 CORPORATE SOURCE: Welding Research Team of Hanjin Heavy Industries,
 Pusan, S. Korea
 SOURCE: Science and Technology of Welding and Joining (
 2005), 10(2), 145-148
 CODEN: STWJFX; ISSN: 1362-1718
 URL:
<http://www.ingentaconnect.com/content/maney/stwj/2005/00000010/00000002>
 PUBLISHER: Maney Publishing
 DOCUMENT TYPE: Journal; (online computer file)
 LANGUAGE: English
 ED Entered STN: 04 Aug 2005
 AB Austenitic stainless steel has good weldability but is sensitive to hot
 cracking such as solidification and liquation cracking. In the present study,
 specimens of dissimilar metals made from austenitic stainless steel and Al
 brass were welded by the GTAW process using four different filler metals.
 Cracks were detected in the heat affected zone of the stainless steel when
 welded with CuAl, CuSn and NiCu filler metals, but no cracks were detected
 when a Ni filler metal was used. The cracks propagated along the grain
 boundary in the heat affected zone near the fusion line to the base metal of
 316L stainless steel. The cracks were located inside the weld bead with very
 fine hairline cracking. All cracks initiated at the fusion line and moved
 forward in the base metal. From energy dispersion spectroscopy (EDS), the Cu
 peak was detected only in the crack-opening area.
 IT 878484-82-3, ERCuSn-B

10/566,721

(filler; effect of weld metal copper content on HAZ cracking in
austenitic stainless steel welded with Al brass)

RN 878484-82-3 HCAPLUS

CN Copper alloy, base, Cu, Sn (ERCuSn-B) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	92	7440-50-8
Sn	8	7440-31-5

CC 55-9 (Ferrous Metals and Alloys)

IT Welding of metals

(gas tungsten-arc; effect of weld metal copper content on HAZ
cracking in austenitic stainless steel welded with Al brass)

IT 56780-79-1, ER NiCu-7 57895-30-4, ER Ni-1 133004-50-9, ER CuAl-A2
878484-82-3, ERCuSn-B

(filler; effect of weld metal copper content on HAZ cracking in
austenitic stainless steel welded with Al brass)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS
RECORD (1 CITINGS)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L52 ANSWER 13 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:346293 HCAPLUS Full-text

DOCUMENT NUMBER: 142:402173

TITLE: Partly insulator-laminated metal tapes
for packaging electronic

INVENTOR(S): devices and manufacturing tapes thereof
Kaimori, Shingo; Sugimoto, Yuji; Nakazawa,
Yoshihiro; Matsuyama, Manabu

PATENT ASSIGNEE(S): Sumitomo Electric Wintec, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005108927	A	20050421	JP 2003-336913	20030929

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PRIORITY APPLN. INFO.: JP 2003-336913 20030929

<--

ED Entered STN: 22 Apr 2005

AB The title metal tape is partly laminated with polymer insulator layers wherein
the insulator layers contain an adhesive agent and a filler are oxidized on
their surface to form Cu₂O. The adhesive agent may be thiols, amines,
benzotriazoles, or benzimidazoles. The tapes have excellent punching,
plating, and atmospheric stabilities.

IT 12793-09-8

(metal tape; partly insulator-coated metal tapes for
packaging electronic devices and manufacturing tapes
thereof)

RN 12793-09-8 HCAPLUS

CN Copper alloy, base, Cu 92, Sn 8 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
=====+=====+=====		
Cu	92	7440-50-8
Sn	8	7440-31-5
IC	ICM H01L023-06	
	ICS B32B007-02; B32B015-08; H01L023-00	
CC	76-2 (Electric Phenomena)	
	Section cross-reference(s): 38, 56	
ST	polymer insulator lamination metal tape adhesive	
	electronic packaging	
IT	Amines, properties	
	Thiols, properties	
	(adhesive; partly insulator-coated metal tapes for	
	packaging electronic devices and manufacturing tapes	
	thereof)	
IT	Electric insulators	
	(laminating layers; partly insulator-	
	coated metal tapes for packaging	
	electronic devices and manufacturing tapes thereof)	
IT	Electric apparatus	
	(packaging tapes for; partly insulator-coated	
	metal tapes for packaging electronic devices	
	and manufacturing tapes thereof)	
IT	Adhesives	
	Fillers	
	Oxidation	
	Punching	
	Soldering	
	(partly insulator-coated metal tapes for	
	packaging electronic devices and manufacturing tapes	
	thereof)	
IT	Coating process	
	(plating; partly insulator-coated metal tapes for	
	packaging electronic devices and manufacturing tapes	
	thereof)	
IT	Electric insulators	
	(polymer adhesive agent containing; partly insulator-coated	
	metal tapes for packaging electronic devices	
	and manufacturing tapes thereof)	
IT	Materials	
	(tapes, metal, insulator laminated; partly insulator-	
	coated metal tapes for packaging	
	electronic devices and manufacturing tapes thereof)	
IT	25895-32-3, Trimellitic acid-methylenedianiline copolymer	
	(adhesive agent; partly insulator-coated metal tapes for	
	packaging electronic devices and manufacturing tapes	
	thereof)	
IT	51-17-2, Benzimidazole 95-14-7, 1H-Benzotriazole	
	(adhesive; partly insulator-coated metal tapes for	
	packaging electronic devices and manufacturing tapes	
	thereof)	
IT	7440-21-3, Silicon, properties	
	(filler; partly insulator-coated metal tapes for	
	packaging electronic devices and manufacturing tapes	
	thereof)	
IT	11109-50-5, SUS 304 12793-09-8 79682-63-6	
	(metal tape; partly insulator-coated metal tapes for	
	packaging electronic devices and manufacturing tapes	

thereof)
 IT 1317-39-1P, Cuprous oxide, properties
 (partly insulator-coated metal tapes for
 packaging electronic devices and manufacturing tapes
 thereof)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS
 RECORD (1 CITINGS)

L52 ANSWER 14 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2004:765542 HCAPLUS Full-text
 DOCUMENT NUMBER: 141:358784
 TITLE: Investigation of lead-free package reliability: a
 new, reliable material is essential
 AUTHOR(S): Lee, Jeffrey C. B.; Li, Simon S. M.
 CORPORATE SOURCE: ASE, Kaohsiung, Taiwan, Taiwan
 SOURCE: Advanced Packaging (2004), 13(8), 27-29
 CODEN: ADPAFZ; ISSN: 1065-0555
 PUBLISHER: PennWell Corp.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

ED Entered STN: 20 Sep 2004

AB A review. Solder containing lead has been widely used in the electronics
 industry as an interconnect and surface finish for PCBs for more than 50 yr.
 The lead-free conversion involves the entire supply chain in the electronics
 industry, requiring consideration of its impact on the current process,
 equipment compatibility, cost, operator training, etc. The major concerns
 arising from promising replacements of lead-free solder, such as ternary
 SnAgCu alloy in laminate package and binary SnCu, and SnBi alloy and matte Sn
 in a lead frame package, are high m.p.s. in comparison to the eutectic SnPb
 alloy. Components subjected to a stringent 30° to 40° higher temperature
 surface mount ~~soldering~~ process to induce significant thermal stress and vapor
 pressure inside the packages give rise to typical failure inside the package.
 Thus, to reduce the propensity of package failure, a new and reliable material
 is essential. Lower moisture uptake, higher adhesion strength, optimized
 modulus and lowest CTE mismatch with related materials will be major factors
 to address the capability in higher reflow temperature

IT ~~12668-36-9~~
 (study of lead-free package reliability)
 RN 12668-36-9 HCAPLUS
 CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

CC 76-3 (Electric Phenomena)
 IT Electronic packages
 Electronic packaging materials
 Electronic packaging process
 Printed circuit boards
 (study of lead-free package reliability)
 IT ~~12668-36-9~~ 12713-30-3 63807-21-6
 (study of lead-free package reliability)

L52 ANSWER 15 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2004:680884 HCAPLUS Full-text
 DOCUMENT NUMBER: 141:198318
 TITLE: Electronic package mounting on electric devices

10/566,721

INVENTOR(S): Matsuzono, Seigo; Shimogai, Masaki; Miyamoto,
Yoshimasa
PATENT ASSIGNEE(S): Kyocera Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004235369	A	20040819	JP 2003-21179	20030129

PRIORITY APPLN. INFO.: JP 2003-21179 20030129
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ED Entered STN: 20 Aug 2004

AB The title elec. devices are prepared by (1) mounting a 1st package by soldering with a 1st solder on an upper surface of an insulative substrate which have Cu external contact pads provided on its lower surface and (2) mounting the 1st-package-mounted insulative substrate on an external elec. circuit substrate by soldering between the Cu external contact pads and the external elec. circuit substrate pads with a Sn-containing 2nd solder. A Cu-Sn alloy particle thin film (particle size 0.5-10 μm) is provided between the Cu external contact pads and the Sn-containing 2nd solder. The thin film of the Cu-Sn alloy particles provides strong adhesion between the Cu external contact pads and the Sn-containing 2nd solder to prevent delamination under repeated thermal stress.

IT 7440-50-8, Copper, properties
(external contacts; electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer
)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

IT 12668-36-9
(microparticle layer for adhesion of solder and pad;
electronic package mounting on elec. devices by soldering
with adhesive Cu-Sn alloy particle layer)

RN 12668-36-9 HCAPLUS

CN Copper alloy, nonbase, Cu, Sn (CA INDEX NAME)

Component	Component Registry Number
=====	=====
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01L023-12

ICS H05K001-18; H05K003-34

CC 76-3 (Electric Phenomena)

Section cross-reference(s): 56

IT Solders

(Sn-containing; electronic package mounting on elec. devices by

soldering with adhesive Cu-Sn alloy particle layer
)
 IT Adhesion, physical
 Electric apparatus
 Electronic packages
 Soldering
 (electronic package mounting on elec. devices by soldering
 with adhesive Cu-Sn alloy particle layer)
 IT Electronic packages
 (integrated circuits; electronic package mounting on elec. devices
 by soldering with adhesive Cu-Sn alloy particle
 layer)
 IT Integrated circuits
 (packages; electronic package mounting on elec. devices by
 soldering with adhesive Cu-Sn alloy particle layer
)
 IT Delamination
 (prevention; electronic package mounting on elec. devices by
 soldering with adhesive Cu-Sn alloy particle layer
)
 IT Stress, mechanical
 (thermal; electronic package mounting on elec. devices by
 soldering with adhesive Cu-Sn alloy particle layer
)
 IT 7440-50-8, Copper, properties
 (external contacts; electronic package mounting on elec. devices by
 soldering with adhesive Cu-Sn alloy particle layer
)
 IT 12668-36-9
 (microparticle layer for adhesion of solder and pad;
 electronic package mounting on elec. devices by soldering
 with adhesive Cu-Sn alloy particle layer)

L52 ANSWER 16 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2004:253865 HCAPLUS Full-text
 DOCUMENT NUMBER: 140:295768
 TITLE: Structural solder ball for electronic packaging
 INVENTOR(S): Liao, Yongfeng
 PATENT ASSIGNEE(S): Peop. Rep. China
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 12
 PP.
 CODEN: CNXXEV
 DOCUMENT TYPE: Patent
 LANGUAGE: Chinese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
CN 1386609	A	20021225	CN 2001-112936	20010518
			<--	
PRIORITY APPLN. INFO.:			CN 2001-112936	20010518
			<--	

ED Entered STN: 29 Mar 2004
 AB The solder ball, which is used for soldering of integrated circuit boards,
 contains a low-resistance metal with higher m.p. such as Pt, Au, Ag, Sn, Sn-
 Ag, Sn-Ag-Cu, Sn-Cu, or Ag-Cu in the central part, and an anti-oxidation film on the
 surface. The distribution of the solder components in a solder ball is
 continuous, and there are no distinct layers of different components.

IT 12668-36-9
 (solder ball for electronic packaging)
 RN 12668-36-9 HCAPLUS
 CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component Component
 Registry Number

=====+=====

Cu 7440-50-8
 Sn 7440-31-5

IC ICM B23K035-24
 ICS B23K031-12; H05K003-34; H01L025-00
 CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 56
 IT ~~Electronic packages~~
 (integrated circuits; solder ball for electronic packaging)
 IT 7439-92-1, Lead, uses 7440-06-4, Platinum, uses 7440-22-4, Silver,
 uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-57-5,
 Gold, uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses
 11144-43-7 11144-61-9 ~~12668-36-9~~ 63807-21-6
 (solder ball for electronic packaging)

L52 ANSWER 17 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2004:100245 HCAPLUS Full-text
 DOCUMENT NUMBER: 140:150146
 TITLE: Brazed copper heat exchangers and their
 fabrication process by welding
 INVENTOR(S): Bonnet, Christian; Fortain, Jean Marie; Wagner,
 Marc
 PATENT ASSIGNEE(S): L'air Liquide Societe Anonyme Pour L'etude Et
 L'exploitation Des ProcedesGeorges Claude, Fr.
 SOURCE: Fr. Demande, 17 pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
FR 2843059	A1	20040206	FR 2002-9658	20020730
			<--	
FR 2843059	B1	20050225		
EP 1422010	A1	20040526	EP 2003-300062	20030716
			<--	
EP 1422010	B1	20060322		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 320876	T	20060415	AT 2003-300062	20030716
			<--	
JP 2004066342	A	20040304	JP 2003-203183	20030729
			<--	
JP 4373149	B2	20091125		
CN 1325222	C	20070711	CN 2003-150380	20030730
			<--	
US 20070214641	A1	20070920	US 2007-752154	20070522
			<--	
PRIORITY APPLN. INFO.:			FR 2002-9658	A 20020730
			<--	

10/566,721

US 2003-628153

A1 20030728

<--

ED Entered STN: 08 Feb 2004

AB Arc welding of a metal part on a substrate containing ≥ 1 brazed zone containing a (Cu+P)-containing braze involves (1) deposition of a Cu alloy layer containing > 1 weight% Sn on at least a portion of the brazed zone and (2) welding of the metal part to the deposited Cu-Sn alloy layer. The procedure is suitable for joining of heat exchanger parts made of stainless steel and Cu, especially for cryogenic air separation

IT 7440-50-8, Copper, processes
(arc welding of brazed copper heat exchangers for cryogenic air separation)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

IT 68369-20-0 76367-38-9 651730-62-0
(interlayer in arc welding of brazed copper heat exchangers for cryogenic air separation)

RN 68369-20-0 HCAPLUS

CN Copper alloy, base, Cu 90-99, Sn 1-10 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	90 - 99	7440-50-8
Sn	1 - 10	7440-31-5

RN 76367-38-9 HCAPLUS

CN Copper alloy, base, Cu 92-98, Sn 2-8 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	92 - 98	7440-50-8
Sn	2 - 8	7440-31-5

RN 651730-62-0 HCAPLUS

CN Copper alloy, base, Cu 94-97, Sn 3-6 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94 - 97	7440-50-8
Sn	3 - 6	7440-31-5

IC ICM B23K009-16
ICS B23K009-23; B23K001-00; B23K101-14

CC 56-9 (Nonferrous Metals and Alloys)
Section cross-reference(s): 47, 49

IT Welding of metals
(of brazed copper heat exchangers)

IT 7440-50-8, Copper, processes
(arc welding of brazed copper heat exchangers for cryogenic air separation)

10/566,721

IT 68369-20-0 76367-38-9 651730-62-0

(interlayer in arc welding of brazed copper heat exchangers for
cryogenic air separation)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L52 ANSWER 18 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2003:962672 HCAPLUS Full-text

DOCUMENT NUMBER: 140:427081

TITLE: Effect of alloying elements on laser welding
characteristics of copper plate

AUTHOR(S): Arai, Hirofumi; Ogura, Tetsuzo; Osako, Junichi

CORPORATE SOURCE: Copper Products Research Section, Chofu Plant,
Aluminum & Copper Company, Kobe Steel, Ltd., Japan

SOURCE: Do to Dogokin (2003), 42, 120-125

CODEN: DDOOAW; ISSN: 1347-7234

PUBLISHER: Do oyobi Dogokin Gijutsu Kenkyukai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

ED Entered STN: 10 Dec 2003

AB Recently, car electronics are developing rapidly and the number of elec.
wiring has increased because a range of safety, for example. Air bag and ABS
or comfort equipment has become standard such as ITS and Car navigation.
Therefore, connectors designed for multipolarization have been developed. At
the same time, to save space, the size of connectors must be reduced and it is
required that the welding and junction are carried out in the narrow area
range. Though conventional soldered joints are simple and cheap, but the
reliability is relatively low because the soldering process produces thermal
defects in a wide range. In addition, technol. which replaces soldered joints
is required from the environmental viewpoint. The laser is the method to meet
these demand. Though the market has required copper material suitable for the
laser joining, there are few refs. that report on the effect of the additive
elements on laser welding characteristic. This study concerns the effect of
the additive elements on laser welding characteristic by evaluating shear
strength and spatter. As the result, laser welding characteristic is improved
by addnl. elements of Sn, Fe, Co and Si, and the Sn plating improved the bond
strength by the enhanced laser absorption rate, however it increased the width
of HAZ.

IT 7440-50-8, Copper, processes 12621-73-7

(effect of alloying elements on laser welding characteristics of
copper plate)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

RN 12621-73-7 HCAPLUS

CN Copper alloy, base, Cu 99, Sn 1 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	99	7440-50-8
Sn	1	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
 IT Welding of metals
 (laser; effect of alloying elements on laser welding characteristics of copper plate)
 IT ~~7440-50-8~~, Copper, processes 11123-03-8 11137-01-2
 11137-03-4 11137-05-6 12621-52-2 ~~12621-73-7~~
 12639-35-9 12643-49-1 39397-99-4 42611-78-9 50948-77-1
 51402-81-4 52359-50-9 53740-65-1 53805-10-0 55351-71-8
 55823-18-2 61455-48-9 67419-43-6 73433-29-1 82282-31-3
 82348-67-2 117915-87-4
 (effect of alloying elements on laser welding characteristics of copper plate)

L52 ANSWER 19 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2003:723516 HCAPLUS Full-text
 DOCUMENT NUMBER: 139:238534
 TITLE: Lead-free solders for electronic device fabrication in atmosphere
 INVENTOR(S): Soga, Tasao; Shimokawa, Hanae; Nakatsuka, Tetsuya; Negishi, Mikio; Nakajima, Koichi; Endo, Tsuneo
 PATENT ASSIGNEE(S): Hitachi Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE -----
JP 2003260587	A	20030916	JP 2002-64251	20020308
			<--	
JP 3757881	B2	20060322		
US 20030224197	A1	20031204	US 2003-384931	20030307
			<--	
US 6872465	B2	20050329		
TW 230105	B	20050401	TW 2003-92104874	20030307
			<--	
CN 1443625	A	20030924	CN 2003-120150	20030310
			<--	
CN 100421861	C	20081001		
CN 101337308	A	20090107	CN 2008-10145147	20030310
			<--	
PRIORITY APPLN. INFO.:			JP 2002-64251	A 20020308
			<--	
			CN 2003-120150	A3 20030310
			<--	

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 16 Sep 2003

AB The solders consist of Sn-type solder balls (A), metal balls (B) having m.p. higher than that of A, and rosin fluxes (optional), wherein B, preferably selected from Cu, Al, Ag, Cu-Sn alloy, Ni-Sn alloy, Zn-Al alloy, and Au-Sn alloy, are covered with Ni layers (for preventing Au dispersion into B) and Au layers (for preventing oxidation of B) in this order. The solders consisting of Sn-type solder balls and Cu balls covered with Ni and Au layers are also claimed, wherein Cu balls are bonded to each other via Cu₆Sn₅-containing compds. which are formed at temps. higher than m.p. of Sn. The solders are usefupl for bonding semiconductor elements to substrates by 1st-reflow soldering at ≤290°, then the elements are subjected to 2nd-reflow soldering using Sn-Ag-Cu solders at .apprx.240°.

IT 7440-50-8, Copper, uses 12668-36-9
 (balls; Pb-free solders consisting of Sn-type solder balls and Ni-
 and Au-covered metal balls for electronic device
 fabrication by 2-step soldering in atmospheric)
 RN 7440-50-8 HCAPLUS
 CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
 CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component Component
 Registry Number

====+=====
 Cu 7440-50-8
 Sn 7440-31-5

IC ICM B23K035-14
 ICS H01L021-60; H01L023-10; H01L023-12; H05K003-34
 CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 56
 ST tin ball solder two step soldering; solder gold nickel
 covering copper ball; semiconductor module mounting reflow
 soldering tin
 IT Electronic packages
 Fluxes
 Printed circuit boards
 Semiconductor devices
 Solders
 (Pb-free solders consisting of Sn-type solder balls and Ni- and Au-
 covered metal balls for electronic device fabrication by
 2-step soldering in atmospheric)
 IT 12019-69-1P
 (Pb-free solders consisting of Sn-type solder balls and Ni- and Au-
 covered metal balls for electronic device fabrication by
 2-step soldering in atmospheric)
 IT 7440-02-0, Nickel, uses 7440-57-5, Gold, uses
 (Pb-free solders consisting of Sn-type solder balls and Ni- and Au-
 covered metal balls for electronic device fabrication by
 2-step soldering in atmospheric)
 IT 7429-90-5, Aluminum, uses 7440-22-4, Silver, uses 7440-31-5, Tin,
 uses 7440-50-8, Copper, uses 11110-83-1 11149-84-1
 12668-36-9 12785-33-0
 (balls; Pb-free solders consisting of Sn-type solder balls and Ni-
 and Au-covered metal balls for electronic device
 fabrication by 2-step soldering in atmospheric)
 OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS
 RECORD (8 CITINGS)

L52 ANSWER 20 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2002:682591 HCAPLUS Full-text
 DOCUMENT NUMBER: 137:340721
 TITLE: An evaluative study of lead-free deposits in high
 speed applications
 AUTHOR(S): Lal, Sudarshan

CORPORATE SOURCE: FCI Electronics, Emigsville, PA, USA
 SOURCE: Proceedings - AESF SUR/FIN Annual International
 Technical Conference (2001) 356-370
 CODEN: PASCFU
 PUBLISHER: American Electroplaters and Surface Finishers
 Society
 DOCUMENT TYPE: Journal; (computer optical disk)
 LANGUAGE: English
 ED Entered STN: 10 Sep 2002
 AB Due to impending environmental legislation and regulation in Japan and Europe,
 and marketing & economic pressures, the connector manufacturers are facing
 challenges to meet the demand for lead-free components. Several chemical
 suppliers have come up with lead-free alternatives offering different baths
 with bright and matte deposits containing tin, tin-copper, and tin-bismuth.
 This study was initiated in the hopes of applying high speed plating to
 terminals utilizing their proprietary recipes and evaluating critically the
 bath performance, deposit properties and potential applications in electronic
 connectors. Data on bath operation, current efficiency, adhesion,
 solderability utilizing wetting balance, aging studies, morphol. of deposits,
 porosity, composition and whisker growth are compared. Corrosion behavior of
 selected coatings was also studied. The general limitations and challenges
 from an operational viewpoint will be discussed.
 IT 474126-13-1
 (lead-free coating; effects of bath composition and current
 efficiency on adhesion, solderability, wetting, aging, morphol. of
 deposits, porosity and composition and whisker growth of Pb-free
 coating)
 RN 474126-13-1 HCAPLUS
 CN Copper alloy, base, Cu 98-99, Sn 1-1.5 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	98 - 99	7440-50-8
Sn	1 - 1.5	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
 ST leadfree coating solder electroplating electronic connector
 IT Electric contacts
 (connectors, electronic connectors; effects of bath composition and
 current efficiency on adhesion, solderability, wetting, aging,
 morphol. of deposits, porosity and composition and whisker growth of
 Pb-free coating)
 IT Current efficiency
 (in bath for Pb-free coating; effects of bath composition and
 current efficiency on adhesion, solderability, wetting, aging,
 morphol. of deposits, porosity and composition and whisker growth of
 Pb-free coating)
 IT Adhesion, physical
 Aging, materials
 Crystal whiskers
 Electrodeposition
 Soldering
 Wetting
 (of Pb-free coating; effects of bath composition and current
 efficiency on adhesion, solderability, wetting, aging, morphol. of
 deposits, porosity and composition and whisker growth of Pb-free
 coating)
 IT Surface structure
 (of lead-free solder coating; effects of bath composition and

current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)

- IT Corrosion
(resistance, of lead-free coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
- IT 7786-81-4, Nickel sulfate
(Ni-matte, Ni under-layer deposited from; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
- IT 7440-44-0, Carbon, uses
(in lead-free solder coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
- IT 7440-31-5, Tin, processes 145890-38-6 215371-96-3 263014-78-4
474126-13-1
(lead-free coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
- IT 12644-62-1
(phosphorus bronze, substrate; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
- IT 12701-18-7
(solder coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
- IT 12597-71-6, Brass, processes 90014-29-2, Alloy 42
(substrate; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating
)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 21 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:413259 HCAPLUS Full-text

DOCUMENT NUMBER: 136:389279

TITLE: Diffusion welding of P/M bronze bearings to a rolled plain carbon steel

AUTHOR(S): Kurt, Adem; Saritas, Suleyman

CORPORATE SOURCE: Department of Metals Technology, Gazi University, Teknikokullar/Ankara, Turk.

SOURCE: Advances in Powder Metallurgy & Particulate Materials (2001) 6/102-6/109
CODEN: APMME3; ISSN: 1065-5824

PUBLISHER: Metal Powder Industries Federation

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: English

ED Entered STN: 03 Jun 2002

AB In this study, effects of welding parameters on the performance of joints obtained by diffusion bonding of P/M bronze to a plain carbon steel was

investigated. P/M bearing materials were prepared from atomized bronze (90w/oCu + 10w/oSn) powder. Pressing was carried out to obtain 25% porosity in the sintered state. Sintering was carried out in a laboratory tube furnace under argon atmospheric at 800 °C for 45 min. The surfaces which would be joined were ground and polished to 0.6 μ finish and cleaned from any grease or stain. Then, diffusion bonding of P/M bearing materials to the plain carbon steel were carried out in a special fixture under 25 MPa contact pressure and 650 °C for 30, 45 and 60 min, and 750 °C and 800 °C for 60 min. The joints were characterized using light and SEM microscopy and miniature tensile tests. Bond strength as high as the strength of the bronze were recorded.

IT 11099-34-6

(diffusion welding of powder metallurgy bronze bearings to a rolled plain carbon steel)

RN 11099-34-6 HCAPLUS

CN Copper alloy, base, Cu 90,Sn 10 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	90	7440-50-8
Sn	10	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)

Section cross-reference(s): 55

IT Welding of metals

(diffusion; diffusion welding of powder metallurgy bronze bearings to a rolled plain carbon steel)

IT 11099-34-6 11121-90-7, Carbon steel, processes

12597-70-5, Bronze

(diffusion welding of powder metallurgy bronze bearings to a rolled plain carbon steel)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 22 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:123942 HCAPLUS Full-text

DOCUMENT NUMBER: 136:328923

TITLE: Electrical MAG welding of zinc galvanized steel sheets

AUTHOR(S): Claeys, J.

CORPORATE SOURCE: Sollac, Dunkerque, F-59381, Fr.

SOURCE: European Commission, [Report] EUR (2001), EUR 19985, 1-110

CODEN: CECED9; ISSN: 1018-5593

DOCUMENT TYPE: Report

LANGUAGE: French

ED Entered STN: 17 Feb 2002

AB Final report on the study of welding of two zinc galvanized carbon steels for automotive industry is presented. Mech. behavior, fatigue and corrosion resistance of the welds are reported. The technol. parameters of the welding process are optimized and the pos. effect of Cu-0.8% Sn welding wire is demonstrated.

IT 12682-95-0

(welding wire; elec. MAG welding of zinc galvanized steel sheets for automotive industry)

RN 12682-95-0 HCAPLUS

CN Copper alloy, base, Cu 94,Sn 6 (CA INDEX NAME)

Component	Component	Component
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	Percent	Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
 IT ~~Welding of metals~~
 (MAG; elec. MAG welding of zinc galvanized steel ~~sheets~~
 for automotive industry)
 IT Automobiles
 (bodies; elec. MAG welding of zinc galvanized steel ~~sheets~~
 for automotive industry)
 IT Fatigue, mechanical
 (elec. MAG welding of zinc galvanized steel ~~sheets~~ for
 automotive industry)
 IT Galvanized steel
 (elec. MAG welding of zinc galvanized steel ~~sheets~~ for
 automotive industry)
 IT Corrosion
 (resistance; elec. MAG welding of zinc galvanized steel
 ~~sheets~~ for automotive industry)
 IT 96476-65-2, ZG25, processes 412285-87-1, ZE07, processes
 (elec. MAG welding of zinc galvanized steel ~~sheets~~ for
 automotive industry)
 IT 12614-75-4 ~~12682-95-0~~ 130863-37-5, Copper 99, tin 0.8
 412287-20-8, GS1D10, processes
 (welding wire; elec. MAG welding of zinc galvanized steel
 ~~sheets~~ for automotive industry)

L52 ANSWER 23 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2002:90491 HCAPLUS Full-text
 DOCUMENT NUMBER: 136:143756
 TITLE: Semiconductor device without erroneous operations,
 manufacturing method thereof and BGA-type
 semiconductor device
 INVENTOR(S): Tanaka, Rika
 PATENT ASSIGNEE(S): Nec Corporation, Japan
 SOURCE: U.S. Pat. Appl. Publ., 13 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
US 20020011664	A1	20020131	US 2001-915728	20010726
			<--	
JP 2002043352	A	20020208	JP 2000-226347	20000727
			<--	
US 20030183932	A1	20031002	US 2003-421430	20030423
			<--	
PRIORITY APPLN. INFO.:			JP 2000-226347	A 20000727
			<--	
			US 2001-915728	B3 20010726
			<--	

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 01 Feb 2002

AB A semiconductor device is provided with a semiconductor substrate with an
 integrated circuit to which external electrodes are connected. The external

electrodes are made of at least one layer selected from among a Cu layer, a Sn-Cu alloy layer and a Sn-Ag alloy layer.

IT 7440-50-8, Copper, processes 12668-36-9
 (semiconductor device without erroneous operations, manufacturing method thereof and BGA-type semiconductor device)
 RN 7440-50-8 HCAPLUS
 CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
 CN Copper alloy, nonbase, Cu, Sn (CA INDEX NAME)

Component Component
 Registry Number

=====+=====

Cu	7440-50-8
Sn	7440-31-5

IC ICM H01L023-48
 ICS H01L023-52; H01L029-40
 INCL 257734000
 CC 76-3 (Electric Phenomena)
 IT Adhesive bonding
 Coating process
 Diffusion barrier
 Electric contacts
 Electrodeposition
 Electronic packages
 Electronic packaging process
 Etching
 Integrated circuits
 Lithography
 Passivation
 Semiconductor devices
 Soldering
 Solders
 (semiconductor device without erroneous operations, manufacturing method thereof and BGA-type semiconductor device)
 IT 7440-50-8, Copper, processes 11144-61-9
 12668-36-9
 (semiconductor device without erroneous operations, manufacturing method thereof and BGA-type semiconductor device)

L52 ANSWER 24 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2001:924240 HCAPLUS Full-text
 DOCUMENT NUMBER: 136:46915
 TITLE: Design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads
 INVENTOR(S): Sugihara, Koichi; Miyashita, Koichi
 PATENT ASSIGNEE(S): Kabushiki Kaisha Toshiba, Japan
 SOURCE: U.S. Pat. Appl. Publ., 18 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20010052643	A1	20011220	US 1999-324774	19990603
US 6392293	B2	20020521		
PRIORITY APPLN. INFO.:			JP 1998-155950	A 19980604

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 21 Dec 2001

AB A conventional semiconductor device having conventional gull-wing and straight outer leads and a manufacturing method of such a semiconductor device are described. Outer leads extend outward from within a package that seals a semiconductor chip, and they are connected to the semiconductor chip inside the package. Depressions are formed at the distal end portions of the outer leads. The depressions are coated with a material which is one of the following: Sn-Pb, Sn-Ag, Sn-Bi, Sn-Zn, Sn-Cu, Pd, Au, and Ag. The depressions are V-shaped, U-shaped, or rectangular. Each depression has a depth which is 30% to 75% with respect to the thickness which the outer lead has at the cut end face of distal end thereof. The outer leads are either a gull-wing type or a straight type.

IT 12668-36-9

(solder; design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)

RN 12668-36-9 HCAPLUS

CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01L021-76

ICS H01L029-40

INCL 257692000

CC 76-3 (Electric Phenomena)

IT Electrodeposition

Electronic packages

Semiconductor device fabrication

Soldering

(design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)

IT Coating process

(dip; design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)

IT Coating process

(electroless; design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)

IT 7440-05-3, Palladium, uses 7440-22-4, Silver, uses 7440-57-5, Gold, uses 11110-87-5 11125-88-5 11144-61-9 12668-36-9 12713-30-3

(solder; design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L52 ANSWER 25 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

10/566,721

ACCESSION NUMBER: 2001:617420 HCAPLUS Full-text
DOCUMENT NUMBER: 135:182470
TITLE: ~~Heat sink.~~
INVENTOR(S): Kawabata, Masaya; Noda, Hajime
PATENT ASSIGNEE(S): Furukawa Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2001230357	A	20010824	JP 2000-35274	20000214

PRIORITY APPLN. INFO.: JP 2000-35274 20000214
<--
<--

ED Entered STN: 24 Aug 2001
AB The title apparatus includes: (a) highly thermal conductive metal baseplate, (b) a solder ~~layer~~ formed in a whole prescribed region on the surface of the above stated baseplate, and (c) metal heat-radiating fins joining with the baseplate by ~~soldering~~ via the solder ~~layer~~. The highly thermal conductive metal is Cu or Cu alloy, the solder ~~layer~~ is formed from Sn-Zn eutectic solder, and the metal heat-radiating fins are corrugated fins formed from Al or Al alloy. The ~~heat sink~~ can be used for cooling semiconductor devices, etc.
IT 7440-50-8, Copper, uses
(baseplate; ~~heat sink~~ with heat-radiating fins
formed on baseplate via solder ~~layer~~)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

IT 12668-36-9
(layer; ~~heat sink~~ with heat-radiating
fins formed on baseplate via solder ~~layer~~)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu, Sn (CA INDEX NAME)

Component	Component
	Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01L023-40
ICS F28F021-08; H01L023-373
CC 47-4 (Apparatus and Plant Equipment)
Section cross-reference(s): 56, 76
ST ~~heat sink~~ baseplate solder metal fin; copper alloy
baseplate aluminum alloy fin; tin zinc eutectic solder fin
~~soldering~~; semiconductor device cooling ~~heat~~
~~sink~~
IT Metals, uses

(baseplate and fins; heat sink with
heat-radiating fins formed on baseplate via solder layer)

IT Semiconductor devices
(cooling of; heat sink with heat-radiating fins
formed on baseplate via solder layer for)

IT Heat exchanger fins
Heat sinks
Heat transfer
Soldering
Solders
(heat sink with heat-radiating fins formed on
baseplate via solder layer)

IT Cooling
(of semiconductor device; heat sink with
heat-radiating fins formed on baseplate via solder layer
for)

IT Copper alloy, base
(baseplate; heat sink with heat-radiating fins
formed on baseplate via solder layer)

IT Aluminum alloy, base
(fins; heat sink with heat-radiating fins
formed on baseplate via solder layer)

IT 7440-50-8, Copper, uses
(baseplate; heat sink with heat-radiating fins
formed on baseplate via solder layer)

IT 7429-90-5, Aluminum, uses
(fins; heat sink with heat-radiating fins
formed on baseplate via solder layer)

IT 11143-56-9 11149-84-1 12668-36-9 12670-31-4
55929-79-8 73235-25-3
(layer; heat sink with heat-radiating
fins formed on baseplate via solder layer)

IT 11125-88-5D, eutectic
(solder; heat sink with heat-radiating fins
formed on baseplate via solder layer)

L52 ANSWER 26 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2000:757933 HCAPLUS Full-text

DOCUMENT NUMBER: 134:35756

TITLE: Phase equilibria and the related properties of
Sn-Ag-Cu based Pb-free solder alloys

AUTHOR(S): Ohnuma, I.; Miyashita, M.; Anzai, K.; Liu, X. J.;
Ohtani, H.; Kainuma, R.; Ishida, K.

CORPORATE SOURCE: Department of Materials Science, Graduate School
of Engineering, Tohoku University, Sendai,
980-8579, Japan

SOURCE: Journal of Electronic Materials (2000),
29(10), 1137-1144

CODEN: JECMA5; ISSN: 0361-5235

PUBLISHER: Minerals, Metals & Materials Society

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 29 Oct 2000

AB We have recently developed a thermodyn. database for micro- soldering alloys
which consists of the elements Pb, Bi, Sn, Sb, Cu, Ag, Zn, and In. In this
paper, the phase equilibrium and the related thermodyn. properties of the Sn-
Ag-Cu base alloys are presented using this database, alloy systems being one
of the promising candidates for Pb-free solders. The isothermal section
diagrams of the Sn-Ag-Cu ternary system were exptl. determined by SEM-EDS, x-
ray diffraction and metallog. techniques. Based on the present results as

well as the previous data on phase boundaries and thermochem. properties, thermodyn. assessment of this system was carried out. The isothermal and vertical section diagrams, liquidus surface, mass fractions of the phase constitution, etc., were calculated. The predictions of surface energy and viscosity were also investigated. Moreover, a non-equilibrium solidification process using the Scheil model was simulated and compared with the equilibrium solidification behavior in some Sn-Ag-Cu base alloys. Calculated results based on the Scheil model were incorporated into a three-dimensional solidification simulation and the prediction of practical solidification procedures was performed.

IT 12711-88-5

(phase equilibrium and the related properties of Sn-Ag-Cu based Pb-free solder alloys)

RN 12711-88-5 HCAPLUS

CN Copper alloy, base, Cu 0-100, Sn 0-100 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	0 - 100	7440-50-8
Sn	0 - 100	7440-31-5

CC 76-13 (Electric Phenomena)

Section cross-reference(s): 56, 68, 75

IT 11142-90-8 11144-62-0 12711-88-5 111448-90-9, Copper

0-100, silver 0-100, tin 0-100 179921-24-5 311819-20-2, Bismuth

0-12, copper 0-100, silver 0-100, tin 0-100 311819-21-3, Copper

0-100, indium 0-12, silver 0-100, tin 0-100 311819-22-4, Copper 0.7,

silver 0.3, tin 99 311819-23-5, Copper 0.57, silver 3.24, tin 96.19

(phase equilibrium and the related properties of Sn-Ag-Cu based Pb-free solder alloys)

OS.CITING REF COUNT: 67 THERE ARE 67 CAPLUS RECORDS THAT CITE THIS RECORD (67 CITINGS)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 27 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1999:304237 HCAPLUS Full-text

DOCUMENT NUMBER: 130:355523

TITLE: Texture analysis of resistance-pressure-spot-welded bronze and brass alloys

AUTHOR(S): Mozaffari, Hadi; Taffner, Ulrike; Seifert, Hans Jorgen; Aldinger, Fritz

CORPORATE SOURCE: MPI Metallforschung, Stuttgart, Germany

SOURCE: Sonderbaende der Praktischen Metallographie (1998), 29(Fortschritte in der Metallographie), 131-135

CODEN: PMSODC; ISSN: 0343-3579

PUBLISHER: DGM Informationsgesellschaft mbH

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 18 May 1999

AB Two specimen of Cu₆Sn bronze and Cu₃Zn brass are welded by pressure resistance welding. The welds of a Cu₆Sn bronze and a Cu₃Zn brass was investigated by several microscopic methods (e.g. light, scanning electron, and transmission electron microscopy, x-ray diffraction, microprobe). The distribution of Cu, Sn, and Zn in the welding zone was determined by the microprobe. The texture anal. of the transcrystn. zone of the welds showed

that it consisted of inhomogeneous α -dendrites and a Sn-rich δ -phase. The mech. properties of the welds were also influenced by the formation of a globulin-like peripheral area.

IT 12682-95-0

(texture anal. of resistance welded bronze and brass alloys)

RN 12682-95-0 HCAPLUS

CN Copper alloy, base, Cu 94, Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)

IT ~~Welding of metals~~

(resistance, pressure; texture anal. of resistance welded bronze and brass alloys)

IT 12621-87-3 12682-95-0

(texture anal. of resistance welded bronze and brass alloys)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 28 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:153668 HCAPLUS Full-text

DOCUMENT NUMBER: 128:220302

ORIGINAL REFERENCE NO.: 128:43593a, 43596a

TITLE: Thermodynamic aspect of the wire-bonding process

AUTHOR(S): Falk, J.

CORPORATE SOURCE: Degussa AG, Rheinfelden, Germany

SOURCE: Microelectronics International (1998),
15(1), 23-31

CODEN: MIINF2; ISSN: 1356-5362

PUBLISHER: MCB University Press

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 14 Mar 1998

AB The influence of process heat, with regard to wire- and substrate-materials, on the adhesion of wire-bonds was investigated. Temperature increases up to 200°C were measured on the interface between surface and wire. This temperature is the basis for demonstrating the important influence of dissipated process heat on the cold ~~welding~~ process of wire-bonding. Complementary calcns. to evaluate the equation of thermal conductivity were carried out using the finite element (FE) method. Bonding tests were able to verify the calcns. These thermodynamical considerations give us a new method to optimize the construction and the choice of materials within the wire-bond process.

IT 12682-95-0

(finite element simulation of thermodyn. aspects of wire-bonding process of Al wire to Au and Ni ~~coated~~ Cu-6Sn substrate)

RN 12682-95-0 HCAPLUS

CN Copper alloy, base, Cu 94, Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
 Section cross-reference(s): 69, 76

IT Wires
 (aluminum; finite element simulation of thermodyn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)

IT Welding of metals
 (diffusion; finite element simulation of thermodyn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)

IT Thermodynamics
 (finite element simulation of thermodyn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)

IT Simulation and Modeling, physicochemical
 (finite-element; of thermodyn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)

IT 7440-02-0, Nickel, processes 7440-57-5, Gold, processes
 (coating; finite element simulation of thermodyn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)

IT 12682-95-0
 (finite element simulation of thermodyn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)

IT 7429-90-5, Aluminum, processes
 (wire; finite element simulation of thermodyn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 29 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:454213 HCAPLUS Full-text

DOCUMENT NUMBER: 127:124880

ORIGINAL REFERENCE NO.: 127:24025a,24028a

TITLE: Diffusion bonding of Cu-Sn alloys and Al-Sn alloys in air

AUTHOR(S): Ito, Isao; Yamada, Hideaki; Ootoguro, Yasuo

CORPORATE SOURCE: Gunma University, Japan

SOURCE: Shindo Gijutsu Kenkyu Kaishi (1996), 35, 126-131
 CODEN: SGKEBX; ISSN: 0370-985X

PUBLISHER: Nippon Shindo Kyokai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

ED Entered STN: 21 Jul 1997

AB Effects of single addition of Sn and combined addition of Sn and other one element (Cu, Mg, Zn, Ti, Bi, Ni) to Al on the diffusion bondability of Cu-3 weight% Sn or Cu-10 weight% Sn alloy and Al alloys in the atmospheric were investigated. Diffusion bondings were carried out at 773 K for 3.6ks and 7.2 ks under the pressure of 2 MPa and 4 MPa. The bonding surfaces were polished with 9 μ m diamond powder. Bondability was evaluated by the shear fracture strength. Such intermetallic compds. as γ_2 , η_2 and θ in the phase diagram of Cu and Al, and δ in that of Cu and Sn were formed in all diffusion couples. The compositionally graded diffusion couple, which consisted of one diffusion piece of Cu-Sn alloy changing gradually in concentration of Sn from 3 to 10 weight% and the other of Al-0.5 weight% Sn, was used to judge the

intermetallic compds. of γ_2 , η_2 , and θ . The couples of Al and Cu-Sn alloys were not bonded while the couples of Al-Sn alloys and Cu-Sn alloys were bonded. The couples of Al-0.5 weight% Sn containing 1 weight% Ni and both Cu-Sn alloys, which were bonded for 3.6 ks under the pressure of 4 MPa, showed the highest shear fracture strength of about 40 MPa. The fracture occurred along the original bonding interface of joint enclosed by the compound η_2 in all diffusion couples. The addnl. element of Sn into Al was concentrated in the phase layer of δ .

IT 11099-34-6 53507-23-6
 (diffusion bonding of Cu-Sn alloys and Al-Sn alloys in air)
 RN 11099-34-6 HCAPLUS
 CN Copper alloy, base, Cu 90, Sn 10 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	90	7440-50-8
Sn	10	7440-31-5

RN 53507-23-6 HCAPLUS
 CN Copper alloy, base, Cu 97, Sn 3 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	97	7440-50-8
Sn	3	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
 IT Welding of metals
 (diffusion; diffusion bonding of Cu-Sn alloys and Al-Sn alloys in air)
 IT 11099-34-6 53507-23-6 55494-69-4 136102-86-8
 136102-87-9 136102-88-0 136102-90-4 136102-91-5 136133-43-2
 (diffusion bonding of Cu-Sn alloys and Al-Sn alloys in air)

L52 ANSWER 30 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1997:360965 HCAPLUS Full-text
 DOCUMENT NUMBER: 127:21956
 ORIGINAL REFERENCE NO.: 127:4257a, 4260a
 TITLE: Tin or tin alloy plating materials having high solder wettability
 INVENTOR(S): Nomura, Yukiya; Miyafuji, Motohisa
 PATENT ASSIGNEE(S): Kobe Steel, Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09078265	A	19970325	JP 1995-231481	19950908
			<--	
JP 3049199	B2	20000605		
PRIORITY APPLN. INFO.:			JP 1995-231481	19950908
			<--	

ED Entered STN: 09 Jun 1997

AB Sn or Sn alloy plated on Cu or Cu alloy is cleaned with an aqueous solution of HF2NH4 having a concentration of 0.5-10 weight% to remove an oxide film present on the surface. The plating is provided on elec. contacts, connectors, terminals, etc.

IT 7440-50-8, Copper, uses 12682-96-1
(tin or tin alloy plating materials having high solder wettability on)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

RN 12682-96-1 HCAPLUS

CN Copper alloy, base, Cu 96, Sn 4 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	96	7440-50-8
Sn	4	7440-31-5

IC ICM C23F001-30
ICS C23G001-02; H01R004-02

CC 56-6 (Nonferrous Metals and Alloys)

IT Soldering
(tin or tin alloy plating materials having high solder wettability on copper or copper alloy)

IT 7440-50-8, Copper, uses 12682-96-1
(tin or tin alloy plating materials having high solder wettability on)

L52 ANSWER 31 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1996:197878 HCAPLUS Full-text

DOCUMENT NUMBER: 124:295811

ORIGINAL REFERENCE NO.: 124:54707a, 54710a

TITLE: Effect of surfacing on the quality of CuSn 6 bronze layers

AUTHOR(S): Haduch, Jerzy

CORPORATE SOURCE: Miedzyresortowe Centrum Naukowe Eksploatacji
Majatku Trwalego, Radom, Pol.

SOURCE: Przegląd Spawalnictwa (1996), 48(1-2),
16-19
CODEN: PRZAA3; ISSN: 0033-2364

PUBLISHER: Agenda Wydawnicza SIMP

DOCUMENT TYPE: Journal

LANGUAGE: Polish

ED Entered STN: 06 Apr 1996

AB Intermittent-arc surfacing with bronze on the 6-mm thick steel plate was performed. The hardness of the hard face was analyzed.

IT 12682-95-0
(effect of surfacing on quality of Cu-Sn bronze layers)

RN 12682-95-0 HCAPLUS

CN Copper alloy, base, Cu 94, Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
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=====+=====+=====
Cu          94          7440-50-8
Sn          6          7440-31-5
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CC 56-6 (Nonferrous Metals and Alloys)

IT ~~Welding~~(effect of surfacing on quality of Cu-Sn bronze ~~layers~~)IT ~~12682-95-0~~ 54297-28-8, St3S, processes(effect of surfacing on quality of Cu-Sn bronze ~~layers~~)

L52 ANSWER 32 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:780739 HCAPLUS Full-text

DOCUMENT NUMBER: 123:176078

ORIGINAL REFERENCE NO.: 123:31251a,31254a

TITLE: Copper alloys for electrodes in spot welding of
steel parts precoated with chromium

INVENTOR(S): Yoshida, Mitsuo; Morita, Junichi

PATENT ASSIGNEE(S): Shinnippon Seitetsu KK, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 07164163	A	19950627	JP 1993-340938	19931210

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PRIORITY APPLN. INFO.: JP 1993-340938 19931210

<--

ED Entered STN: 08 Sep 1995

AB The Cu-alloy electrodes have surface Vickers microhardness ≥ 150 but < 300 . The overlapping steel ~~sheets~~ precoated with Cr and ~~overcoated~~ with Cr oxides are welded with adjusting the width of flat electrode contact zone to 1-3 times the lapped width of the steel ~~sheets~~. The welding process gives low contact resistivity between the electrodes and ~~sheets~~, and permits wide range of elec. current for welding without a fume discharge.

IT ~~7440-50-8~~, Copper, processes ~~58250-55-8~~(welding electrode; copper alloy electrodes for seam welding of
steel ~~sheets~~ precoated with chromium)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

RN 58250-55-8 HCAPLUS

CN Copper alloy, base, Cu 96, Sn 4.5 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
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=====+=====+=====
Cu          96          7440-50-8
Sn          4.5        7440-31-5
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IC ICM B23K011-30

ICS B23K011-08; B23K011-16; B23K035-30; C25D011-38
 CC 55-9 (Ferrous Metals and Alloys)
 ST electrode seam welding chromium coated steel
 IT Welding
 (seam; copper alloy electrodes for seam welding of steel
 ~~sheets~~ precoated with chromium)
 IT Copper alloy, base
 (electrodes; copper alloy electrodes for seam welding of steel
 ~~sheets~~ precoated with chromium)
 IT 12597-69-2, Steel, processes
 (chromium-coated; copper alloy electrodes for seam
 welding of steel ~~sheets~~ precoated with chromium)
 IT 7440-47-3, Chromium, processes
 (coating, steel ~~sheets~~ with; copper alloy
 electrodes for seam welding of steel ~~sheets~~ precoated
 with chromium)
 IT 1333-82-0, Chromium oxide (CrO₃)
 (coating, steel ~~sheets~~ with; copper alloy
 electrodes for seam welding of steel ~~sheets~~ precoated
 with chromium)
 IT 7440-50-8, Copper, processes 11123-03-8 11145-98-5
 12620-49-4 12665-54-2 12682-28-9 39418-32-1 ~~58250-55-8~~
 130863-37-5 167636-66-0 167636-67-1 167636-68-2 167636-69-3
 (welding electrode; copper alloy electrodes for seam welding of
 steel ~~sheets~~ precoated with chromium)

L52 ANSWER 33 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1991:233233 HCAPLUS Full-text
 DOCUMENT NUMBER: 114:233233
 ORIGINAL REFERENCE NO.: 114:39281a
 TITLE: Copper alloys for electric lead frames suitable
 for soldering
 INVENTOR(S): So, Hidehiko
 PATENT ASSIGNEE(S): Nippon Mining Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 02141562	A	19900530	JP 1988-293651	19881122
			<--	
PRIORITY APPLN. INFO.:			JP 1988-293651	19881122
			<--	

ED Entered STN: 15 Jun 1991
 AB The dilute Cu alloys contain Sn 0.1-3.0, P 0.01-0.10, and optionally Be, Mg, Al, Si, Ti, Cr, Mn, Fe, Co, Ni, Zn, Pb, Ag, and/or Zr 0.001-3.0%. The alloy strip is finish rolled and stress-relief annealed in a nonoxidizing or reducing atmospheric to give a product for manufacture of elec. lead frames and similar parts suitable for tinning or soldering.
 IT 12687-16-0 51880-71-8 123774-03-8
 (for elec. lead frames, with stress relief for tinning and
 soldering)
 RN 12687-16-0 HCAPLUS
 CN Copper alloy, base, Cu 98, Sn 2 (CA INDEX NAME)

Component Component Component

	Percent	Registry Number
=====+=====+=====		
Cu	98	7440-50-8
Sn	2	7440-31-5

RN 51880-71-8 HCAPLUS

CN Copper alloy, base, Cu 98, Sn 2.5 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
=====+=====+=====		
Cu	98	7440-50-8
Sn	2.5	7440-31-5

RN 123774-03-8 HCAPLUS

CN Copper alloy, base, Cu 99, Sn 1.2 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
=====+=====+=====		
Cu	99	7440-50-8
Sn	1.2	7440-31-5

IC ICM C22F001-08

ICS H01B001-02; H01L023-48

ICA C22C009-02

CC 56-3 (Nonferrous Metals and Alloys)

Section cross-reference(s): 76

ST copper alloy lead frame ~~soldering~~; elec lead frame copper alloy; formability copper alloy strip

IT Electric conductors

(lead frames, copper alloys for, stress-relief annealed strip for tinning and ~~soldering~~ of)

IT 12687-16-0 51880-71-8 123774-03-8

134006-48-7 134006-49-8 134006-50-1 134006-51-2 134006-52-3

134006-53-4

(for elec. lead frames, with stress relief for tinning and ~~soldering~~)

L52 ANSWER 34 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1990:486558 HCAPLUS Full-text

DOCUMENT NUMBER: 113:86558

ORIGINAL REFERENCE NO.: 113:14455a,14458a

TITLE: The vacuum system of the HERA electron storage ring

AUTHOR(S): Ballion, R.; Boster, J.; Giesske, W.; Hartwig, H.; Jagnow, D.; Kose, R.; Kouptsidis, J.; Schumann, G.; Schwartz, M.

CORPORATE SOURCE: DESY, Hamburg, D-2000, Germany

SOURCE: Particle Accelerators (1990), 29(1-4), 145-52

CODEN: PLACBD; ISSN: 0031-2460

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 01 Sep 1990

AB The 6.3 km long vacuum system of the HERA e ring is fabricated by brazing tubes made from the Cu bronze containing 2% Sn. This Cu alloy absorbs synchrotron light more efficiently than Al and therefore reduces radiation shielding problems. The system is mainly pumped by integrated sputter-ion pumps using the fields of the dipole and quadrupole magnets. They provide a

maximum linear pumping speed of 30 L/s per m. The impedance of the beam environment is kept small by minimizing the dimensions of the pump slots and avoiding steps of >1 mm inside the vacuum chamber. A vacuum pressure in the 1--9 mbar range was achieved some days after assembly of the vacuum system and without bake out in-situ. A beam life time of >1 h was observed during the first test runs of HERA.

IT 12687-16-0

(electron storage ring vacuum chamber main beam tube and pump channel of)

RN 12687-16-0 HCAPLUS

CN Copper alloy, base, Cu 98, Sn 2 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	98	7440-50-8
Sn	2	7440-31-5

IT 7440-50-8, Copper, uses and miscellaneous

(vacuum chamber water cooling tubes of oxygen free, of electron storage ring)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

CC 71-1 (Nuclear Technology)

IT Soldering

(brazing, of electron storage ring vacuum system components)

IT 12687-16-0

(electron storage ring vacuum chamber main beam tube and pump channel of)

IT 7440-50-8, Copper, uses and miscellaneous

(vacuum chamber water cooling tubes of oxygen free, of electron storage ring)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L52 ANSWER 35 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1989:43149 HCAPLUS Full-text

DOCUMENT NUMBER: 110:43149

ORIGINAL REFERENCE NO.: 110:7111a, 7114a

TITLE: Friction welding of incompatible materials

AUTHOR(S): Sassani, F.; Neelam, J. R.

CORPORATE SOURCE: Dep. Mech. Eng., Univ. British Columbia, Vancouver, BC, Can.

SOURCE: Welding Journal (Miami, FL, United States) (1988), 67(11), 264s-270s
CODEN: WEJUA3; ISSN: 0043-2296

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 04 Feb 1989

AB A modified method for friction welding of incompatible metals and alloys was investigated. Friction welding of brass to Cu, bronze to steel, and Ti to Ni with different interlayers was performed, and varying degrees of success and mech. joint strengths were observed Metallurgical analyses and observations of

the extent of metal bonding and diffusion showed that incompatible metals are friction welded with an interlayer, and mech. improved joints are obtained.

IT 11099-34-6
 (friction welding of, to steel with copper interlayer)
 RN 11099-34-6 HCAPLUS
 CN Copper alloy, base, Cu 90, Sn 10 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	90	7440-50-8
Sn	10	7440-31-5

IT 7440-50-8, Copper, properties
 (friction welding of, to yellow brass with naval brass interlayer)
 RN 7440-50-8 HCAPLUS
 CN Copper (CA INDEX NAME)

Cu

CC 56-9 (Nonferrous Metals and Alloys)
 IT Welding
 (friction, of incompatible metals and alloys with metal interlayer)
 IT 11099-34-6
 (friction welding of, to steel with copper interlayer)
 IT 7440-50-8, Copper, properties
 (friction welding of, to yellow brass with naval brass interlayer)
 OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS
 RECORD (3 CITINGS)

L52 ANSWER 36 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1987:482343 HCAPLUS Full-text
 DOCUMENT NUMBER: 107:82343
 ORIGINAL REFERENCE NO.: 107:13459a,13462a
 TITLE: High-strength copper alloy for conducting springs
 INVENTOR(S): So, Hidehiko; Tsuji, Masahiro
 PATENT ASSIGNEE(S): Nippon Mining Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62083443	A	19870416	JP 1985-223682	19851009
			<--	
PRIORITY APPLN. INFO.:			JP 1985-223682	19851009
			<--	

ED Entered STN: 05 Sep 1987
 AB The Cu alloy having good elec. conductivity contains Sn 0.8-2, P 0.005-0.08, Mn 0.05-0.2, and optionally 0.05-1% of Ni with Al, Be, Co, Cr, Fe, Hg, In, Mo, Mg, Pb, Si, Te, Ti, Zn, and/or Zr each. Thus, a strip 0.8 mm thick of Cu alloy containing Sn 1.25, P 0.05, and Mn 0.18% was coated with 5 μ Sn-40% Pb solder by dipping into melt for 5 s. The coated strip was heated at 150°, and

tested in bending through 90° angle with straightening every 100 h. No peeling of the solder layer was observed in 2000 h. A similarly coated strip of Cu alloy containing 1.25% Sn, 0.04% P, and no Mn failed the test in 1300 h.

IT ~~12687-16-0~~

(solderability of, for elec. conducting springs)

RN 12687-16-0 HCAPLUS

CN Copper alloy, base, Cu 98, Sn 2 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	98	7440-50-8
Sn	2	7440-31-5

IC ICM C22C009-02

ICA H01B001-02; H01L023-48

CC 56-3 (Nonferrous Metals and Alloys)

Section cross-reference(s): 76

IT Soldering

(of copper-tin dilute alloys, for elec. conducting springs)

IT ~~12687-16-0~~ 109952-08-1 109952-17-2 109952-18-3
 109952-19-4 109952-20-7 109952-21-8 109952-22-9 109952-23-0
 109952-24-1 109952-25-2 109952-26-3 109952-27-4 109952-28-5
 109952-29-6 109952-30-9 109952-31-0

(solderability of, for elec. conducting springs)

L52 ANSWER 37 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1987:469246 HCAPLUS Full-text

DOCUMENT NUMBER: 107:69246

ORIGINAL REFERENCE NO.: 107:11269a, 11272a

TITLE: Compound superconducting wires

INVENTOR(S): Kono, Tsukasa; Ikeno, Yoshimitsu; Sugimoto, Masaru

PATENT ASSIGNEE(S): Fujikura Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62067155	A	19870326	JP 1985-205578	19850918

<--

PRIORITY APPLN. INFO.: JP 1985-205578 19850918

<--

ED Entered STN: 21 Aug 1987

AB In forming a compound (e.g., Nb₃Sn) super conductor wire by thermal diffusion processing, a 1st tape comprising ≥1 element(s) (e.g., bronze), which are part of the elements constituting the superconductor, is wrapped around a rod comprising the rest of the elements (e.g., Nb) constituting the superconductor, a 2nd tape comprising the same elements as those of the rod is wrapped around the rod, a 3rd (cover) tape is wrapped around the 2nd tape, and the ends of the 2nd tape are welded together.

IT ~~11099-35-7~~

(tapes from, formation of superconductor wires using)

RN 11099-35-7 HCAPLUS

CN Copper alloy, base, Cu 88, Sn 12 (CA INDEX NAME)

Component	Component	Component
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10/566,721

	Percent	Registry Number
Cu	88	7440-50-8
Sn	12	7440-31-5

IC ICM C22F001-00
ICS H01B013-00
CC 76-4 (Electric Phenomena)
IT ~~Welding~~
(superconductor wire formation by)
IT 7440-03-1, Niobium, uses and miscellaneous 11099-35-7
12605-80-0
(tapes from, formation of superconductor wires using)

L52 ANSWER 38 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1987:54519 HCAPLUS Full-text
DOCUMENT NUMBER: 106:54519
ORIGINAL REFERENCE NO.: 106:8959a,8962a
TITLE: Manufacture of superconductor
INVENTOR(S): Suzuki, Hidemoto; Ichihara, Masamitsu; Kamisada, Yoshimasa; Aoki, Nobuo; Kumano, Tomoyuki
PATENT ASSIGNEE(S): Showa Electric Wire and Cable Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61136663	A	19860624	JP 1984-259001	19841207
PRIORITY APPLN. INFO.:			JP 1984-259001	19841207

ED Entered STN: 21 Feb 1987
AB Composite-reinforced superconductors suitable for electromagnets are manufactured with a rectangular cross-section by: (1) wrapping the core (such as a stainless steel, Mo, or W wire surrounded by Nb wires in a Cu-Sn alloy matrix) in a longitudinal direction, especially with a Cu or Al strip; (2) ~~welding~~ the strip seams; (3) rolling to remove porosity; (4) optionally annealing; and (5) stretching (especially swaging) for >80% reduction into a rectangular shape. Resulting superconductor can be made longer than that made by conventional methods. Thus, stainless steel wire (2.6 mm diameter) was wrapped with composite wire having Nb fibers in Cu-Sn alloy matrix (2.6 mm diameter), wrapped with Cu tape, welded shut, rolled to 9 mm diameter, cold-worked to 5 mm diameter, annealed at 500° for 1 h, and cold-worked into a composite wire having 3.5 + 5 mm cross-section.
IT ~~12668-36-9P~~
(composite, manufacture of, for superconductor cables)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component	Registry Number
Cu		7440-50-8
Sn		7440-31-5

IT ~~7439-98-7P~~, Molybdenum, preparation ~~7440-50-8P~~,
Copper, uses and miscellaneous

(superconductor core, manufacture of)

RN 7439-98-7 HCAPLUS

CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

IC ICM C22F001-00

ICS H01B013-00

ICA H01B012-02; H01F005-08

CC 56-11 (Nonferrous Metals and Alloys)

Section cross-reference(s): 76

IT ~~12668-36-9P~~

(composite, manufacture of, for superconductor cables)

IT ~~7439-98-7P~~, Molybdenum, preparation ~~7440-33-7P~~, Tungsten,preparation ~~7440-50-8P~~, Copper, uses and miscellaneous~~12597-68-1P~~, Stainless steel, preparation

(superconductor core, manufacture of)

L52 ANSWER 39 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1986:557233 HCAPLUS Full-text

DOCUMENT NUMBER: 105:157233

ORIGINAL REFERENCE NO.: 105:25299a,25302a

TITLE: Copper and nickel alloys clad with platinum and
its alloys. Joining techniques and mechanical
properties

AUTHOR(S): Ott, D.; Raub, C. J.

CORPORATE SOURCE: Forschungsinst. Edelmet. Metallchem., Schwaebisch
Gmuend, Fed. Rep. Ger.SOURCE: Platinum Metals Review (1986), 30(3),
132-40

CODEN: PTMRA3; ISSN: 0032-1400

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 01 Nov 1986

AB The joining and the mech. properties of joints of Cu (99.9%) and various Cu alloys clad with Pt (99.99) and Pt-5Co [103705-33-5] and Pt-5Ir [54658-87-6] were studied, based on the Vickers hardness-deformation degree and hardness-temperature curves. The Cu alloys were Cu-(6-8)Sn [~~104570-60-7~~] and Cu-(10-40)%Ni [12757-27-6], including Ni electroplate on Cu. The deformation characteristics of the Pt and Pt alloys were assessed at 600-900°, which is the critical range of ~~welding~~ temperature. The most convenient cladding was achieved by hot pressing at 700°, 20 min, and by 7 kN, as compared to cold or hot rolling, and composite casting of the lower m.p. substrate onto the Pt surface. The Cu-Ni alloys were more suitable for clad substrates than the other alloys, including pure Cu.

IT ~~104570-60-7~~ ~~7440-50-8~~, uses and miscellaneous

(cladding of, with platinum and platinum alloys by hot pressing,

mech. properties in relation to)

RN 104570-60-7 HCAPLUS

CN Copper alloy, base, Cu 92-94, Sn 6-8 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	92 - 94	7440-50-8
Sn	6 - 8	7440-31-5

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

CC 56-9 (Nonferrous Metals and Alloys)

Section cross-reference(s): 57, 76

IT ~~104570-60-7~~ 7440-50-8, uses and miscellaneous
12757-27-6

(cladding of, with platinum and platinum alloys by hot pressing,
mech. properties in relation to)

L52 ANSWER 40 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1986:519375 HCAPLUS Full-text

DOCUMENT NUMBER: 105:119375

ORIGINAL REFERENCE NO.: 105:19265a, 19268a

TITLE: Layered electric contacts

INVENTOR(S): Yamaguchi, Kenji; Sanki, Sadahiko

PATENT ASSIGNEE(S): Hitachi Cable, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61073889	A	19860416	JP 1984-195714	19840920

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PRIORITY APPLN. INFO.: JP 1984-195714 19840920

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ED Entered STN: 03 Oct 1986

AB A steel or alloy surface is clad with Cu or its alloy by rolling, and a portion is masked to remove the clad metal and manufacture elec. contacts. Thus, Cu ribbon 10μ thick was press-bonded on 1 side of 0.25 mm thick strip of Fe-42% Ni alloy. The Ag braze was press-bonded on the other side, and both sides were masked with a plastic tape. The ~~sheet~~ was chemical etched in an NH4OH-H2O2 solution to remove Cu and Ag layers. The method produced dimensionally correct products.

IT ~~12621-73-7~~

(vapor deposition of, on alloy for elec. contacts, masking and etching in)

RN 12621-73-7 HCAPLUS

CN Copper alloy, base, Cu 99, Sn 1 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	99	7440-50-8
Sn	1	7440-31-5

IC ICM C23F001-00

ICS B23K020-00

CC 56-9 (Nonferrous Metals and Alloys)

Section cross-reference(s): 76

IT Soldering

(brazing, with silver alloy, on steel, for elec. contacts
by masking and etching)

IT 12621-73-7

(vapor deposition of, on alloy for elec. contacts, masking and
etching in)

L52 ANSWER 41 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1986:93586 HCAPLUS Full-text

DOCUMENT NUMBER: 104:93586

ORIGINAL REFERENCE NO.: 104:14773a,14776a

TITLE: Cavitation resistance of bronzes for surfacing of
the most loaded components of friction pairs of
hydroelectric power plants

AUTHOR(S): Darchiashvili, G. I.

CORPORATE SOURCE: USSR

SOURCE: Nov. Protsessy Naplavki, Svoistva Naplavlennogo
Met. Perekhodnoi Zony (1984), 104-8.Editor(s): Gladkii, P. V. Akad. Nauk Ukr. SSR,
Inst. Elektrosvariki: Kiev, USSR.

CODEN: 54FJA9

DOCUMENT TYPE: Conference

LANGUAGE: Russian

ED Entered STN: 22 Mar 1986

AB The cavitation resistance of standard and exptl. Sn bronzes addnl. alloyed
with rare-earth metals was studied to select the most appropriate material for
surfacing highly loaded friction parts operating in conditions of hydrodynamic
cavitation of a working fluid. At hydraulic fluid temperature 80° during 7 h
testing, the exptl. bronze Br4 had the highest cavitation resistance.
Spectrograms of wear surfaces of Br4 and standard bronze BrOS10-10 showed
significant amts. of Cu and Sn in wear products. At >75% Sn, ppts. of a
brittle δ -phase were observed; they constituted the initial sources of fatigue
rupture. The addition of Ce hampered the harmful effect of the brittle phase,
decreased Cu and Sn concns. in wear products, and improved cavitation
resistance.

IT 70331-63-4

(for surfacing of loaded friction pairs of hydroelec. power units,
hydrodynamic cavitation of)

RN 70331-63-4 HCAPLUS

CN Copper alloy, base, Cu,Sn (Br3) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	97	7440-50-8
Sn	3.2	7440-31-5

CC 56-10 (Nonferrous Metals and Alloys)

IT Welding

(surfacing, of loaded friction pairs of hydroelec. power units, tin

bronzes for, hydrodynamic cavitation of)

IT 12675-87-5 12773-58-9 12773-99-8 57621-45-1 65107-57-5
~~70331-63-4~~ 100438-40-2 100438-41-3 100438-42-4
 100438-43-5 100438-44-6 101179-70-8

(for surfacing of loaded friction pairs of hydroelec. power units,
 hydrodynamic cavitation of)

L52 ANSWER 42 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1983:598818 HCAPLUS Full-text

DOCUMENT NUMBER: 99:198818

ORIGINAL REFERENCE NO.: 99:30559a,30562a

TITLE: Cracking caused by copper during the welding of
 steel

AUTHOR(S): Kapteijn, J.

CORPORATE SOURCE: Lab. Metalkd., Delft, Neth.

SOURCE: Lastechniek (1983), 49(7), 124-8

CODEN: LASTAW; ISSN: 0023-8694

DOCUMENT TYPE: Journal

LANGUAGE: Dutch

ED Entered STN: 12 May 1984

AB During the welding of steel the cracking can be caused by contaminating Cu,
 which in molten state $\geq 1083^\circ$ penetrates the welded metal along grain
 boundaries. If enough O is present the solid, nonpenetrating CuO is formed.
 Expts. are described showing that the alloying of Cu with Al or Si accelerates
 the oxidation and thus gives greater crack resistance. Cracking may occur
 also by welding with other metals (e.g., some alloys of Co and of Al). At
 $\geq 750^\circ$ Zn causes cracks during the welding of austenitic stainless steel.

IT ~~7440-50-8P~~, uses and miscellaneous

(in welding of steel, crack formation by molten, oxidation effect on)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

IT ~~12793-09-8~~

(welding of steel by, crack formation during, oxidation effect on)

RN 12793-09-8 HCAPLUS

CN Copper alloy, base, Cu 92, Sn 8 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	92	7440-50-8
Sn	8	7440-31-5

CC 55-9 (Ferrous Metals and Alloys)

IT ~~Welding~~

(of steel, crack formation in, copper effect on)

IT ~~7440-50-8P~~, uses and miscellaneous

(in welding of steel, crack formation by molten, oxidation effect on)

IT 11101-23-8 11133-99-6 12773-58-9 ~~12793-09-8~~

39398-46-4 73323-16-7 87809-82-3 87809-83-4 87809-84-5

87809-85-6

(welding of steel by, crack formation during, oxidation effect on)

L52 ANSWER 43 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1982:447939 HCAPLUS Full-text

DOCUMENT NUMBER: 97:47939

ORIGINAL REFERENCE NO.: 97:7943a,7946a

TITLE: Ultrasonic welding of oxidized silver
cadmium oxide (AgCdO) contact parts

AUTHOR(S): Wodara, Johannes; Sporkenbach, Detlev

CORPORATE SOURCE: Tech. Hochsch. Magdeburg, Magdeburg, Ger. Dem.
Rep.

SOURCE: ZIS Mitteilungen (1982), 24(4), 407-13
CODEN: ZISMAH; ISSN: 0044-1465

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 12 May 1984

AB The ultrasonic welding of Ag 10 CdO and Ag-10CdO-Co contacts to Cu, Al, Cu-37
Zn, Cu-6Sn, and Cu-coated steel with intermediate foils of Ag, Al, and Cu and
powders of Al, Al₂O₃, and W carbide was studied. The strongest welding of
contacts was obtained with an Al powder intermediate.

IT 7440-50-8, uses and miscellaneous 12682-95-0
(ultrasonic welding of cadmium oxide-silver contacts to)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

RN 12682-95-0 HCAPLUS

CN Copper alloy, base, Cu 94, Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

CC 76-2 (Electric Phenomena)

ST ultrasonic welding contact silver cadmium oxide

IT Process optimization
(of ultrasonic welding of silver-cadmium oxide contacts)

IT Electric contacts
(silver cadmium oxide, ultrasonic welding of)

IT Welding
(ultrasonic, of silver cadmium oxide contacts)

IT 11144-41-5
(ultrasonic welding of)

IT 7440-22-4, uses and miscellaneous
(ultrasonic welding of cadmium oxide-silver contact with
intermediate foil of)

IT 7440-48-4, uses and miscellaneous
(ultrasonic welding of cadmium oxide-silver contacts
containing)

IT 7429-90-5, uses and miscellaneous 7440-50-8, uses and
miscellaneous 12597-69-2, uses and miscellaneous 12621-87-3
12682-95-0
(ultrasonic welding of cadmium oxide-silver contacts to)

IT 7429-90-5, uses and miscellaneous 12070-12-1
(ultrasonic welding of cadmium oxide-silver contacts with

intermediate powder of)

L52 ANSWER 44 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1981:507432 HCAPLUS Full-text
 DOCUMENT NUMBER: 95:107432
 ORIGINAL REFERENCE NO.: 95:17859a,17862a
 TITLE: Aluminum alloy for a power- and/or form-determined
 joining technique
 INVENTOR(S): Scheel, Wolfgang; Albrecht, Juergen; Heymann,
 Guenter
 PATENT ASSIGNEE(S): Ger. Dem. Rep.
 SOURCE: Ger. (East), 8 pp.
 CODEN: GEXXA8
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 147289	A1	19810325	DD 1979-216724	19791107

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PRIORITY APPLN. INFO.: DD 1979-216724 A1 19791107

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ED Entered STN: 12 May 1984

AB A joining alloy for linking up Cu alloy contacts and Cu wires so that they are strong with long lifetimes consists of Al-Cu-Si, especially Al-4Cu-Si. Thus, a Cu wire was welded to a Cu-6 Sn contact by a join of Al-4Cu-Si.

IT 12682-95-0

(aluminum-copper-silicon joining alloy for welding of copper wires to)

RN 12682-95-0 HCAPLUS

CN Copper alloy, base, Cu 94, Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

IT 7440-50-8, uses and miscellaneous
 (welding of, to copper based alloys,
 aluminum-copper-silicon alloy for)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

IC H01B001-02

CC 76-14 (Electric Phenomena)

IT Electric conductors

(copper wires, aluminum-copper-silicon joiner for welding of, to copper alloys)

IT Welding

(of copper and copper alloy contacts, aluminum-copper-silicon alloy joiner for)

- IT Copper alloy, base
 (aluminum-copper-silicon joining alloy for welding of
 copper wires to)
- IT 12682-95-0
 (aluminum-copper-silicon joining alloy for welding of
 copper wires to)
- IT 37254-60-7
 (joining material, for welding of copper wires to copper
 alloys)
- IT 71789-32-7
 (joining material, for welding of copper wires to
 copper-tin alloy)
- IT 7440-50-8, uses and miscellaneous
 (welding of, to copper based alloys,
 aluminum-copper-silicon alloy for)

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(FILE 'HOME' ENTERED AT 12:25:51 ON 18 MAY 2010)

FILE 'HCAPLUS' ENTERED AT 12:25:57 ON 18 MAY 2010

L1 1 SEA SPE=ON ABB=ON PLU=ON US20060244125/PN
SEL RN

FILE 'REGISTRY' ENTERED AT 12:26:19 ON 18 MAY 2010

L2 1 SEA SPE=ON ABB=ON PLU=ON 7439-98-7/RN
L3 1 SEA SPE=ON ABB=ON PLU=ON 7440-50-8/RN
L4 1 SEA SPE=ON ABB=ON PLU=ON 12668-36-9/RN
E CU.SN/MF
L5 761 SEA SPE=ON ABB=ON PLU=ON CU.SN/MF
L6 761 SEA SPE=ON ABB=ON PLU=ON L5 AND 1-13/SN
L7 327 SEA SPE=ON ABB=ON PLU=ON L5 AND 1-13 SN/MAC

FILE 'HCAPLUS' ENTERED AT 13:14:17 ON 18 MAY 2010

L8 1690 SEA SPE=ON ABB=ON PLU=ON L7
L9 140963 SEA SPE=ON ABB=ON PLU=ON L2
L10 628571 SEA SPE=ON ABB=ON PLU=ON L3
L11 QUE SPE=ON ABB=ON PLU=ON SOLDERING? OR WELDING? OR
BRAZING?
L12 71 SEA SPE=ON ABB=ON PLU=ON L8 AND L11
L13 56 SEA SPE=ON ABB=ON PLU=ON L12 AND (1840-2005)/PRY,AY,PY
L14 2129 SEA SPE=ON ABB=ON PLU=ON L4
L15 193 SEA SPE=ON ABB=ON PLU=ON L14 AND L11
L16 5 SEA SPE=ON ABB=ON PLU=ON L15 AND L9 AND L10
E ELECTRONIC PACKAGES/CT
L17 20277 SEA SPE=ON ABB=ON PLU=ON "ELECTRONIC PACKAGES"+PFT,NT/CT
E HEAT SINKS/CT
L18 6960 SEA SPE=ON ABB=ON PLU=ON "HEAT SINKS"+PFT,NT/CT
L19 1 SEA SPE=ON ABB=ON PLU=ON L13 AND (L17 OR L18)
L20 0 SEA SPE=ON ABB=ON PLU=ON L13 AND HEAT SINK?
L21 1 SEA SPE=ON ABB=ON PLU=ON L13 AND ELECTRONIC PACKAG?
L22 QUE SPE=ON ABB=ON PLU=ON FILM? OR THINFILM? OR LAYER?
OR OVERLAY? OR OVERLAID? OR LAMIN? OR LAMEL? OR (MULTILAYER
?) OR SHEET? OR LEAF? OR FOIL? OR COAT? OR TOPCOAT? OR
OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR
ENCAS? OR ENWRAP? OR OVERSPREAD?
L23 28 SEA SPE=ON ABB=ON PLU=ON L13 AND L22
L24 61 SEA SPE=ON ABB=ON PLU=ON L13 OR L16 OR (L19 OR L20 OR
L21) OR L23
L25 15 SEA SPE=ON ABB=ON PLU=ON L24 AND ELECTRIC?/SC,SX
L26 127 SEA SPE=ON ABB=ON PLU=ON L15 AND L22
L27 82 SEA SPE=ON ABB=ON PLU=ON L26 AND (1840-2005)/PRY,AY,PY
L28 60 SEA SPE=ON ABB=ON PLU=ON L27 AND ELECTRIC?/SC,SX
L29 60 SEA SPE=ON ABB=ON PLU=ON L28 AND L22
L30 15 SEA SPE=ON ABB=ON PLU=ON L29 AND (L17 OR L18)
L31 3 SEA SPE=ON ABB=ON PLU=ON L30 AND HEAT SINK?
L32 15 SEA SPE=ON ABB=ON PLU=ON (L30 OR L31)
L33 29 SEA SPE=ON ABB=ON PLU=ON L25 OR L32
L34 1 SEA SPE=ON ABB=ON PLU=ON L33 AND L1
L35 0 SEA SPE=ON ABB=ON PLU=ON L8 AND L17 AND L18
L36 4 SEA SPE=ON ABB=ON PLU=ON L8 AND (L17 OR L18)
E SOLDERING/CT
L37 20970 SEA SPE=ON ABB=ON PLU=ON SOLDERING+PFT,NT/CT
L38 15 SEA SPE=ON ABB=ON PLU=ON L8 AND L37

E WELDING/CT

L39	82910	SEA	SPE=ON	ABB=ON	PLU=ON	WELDING+PFT,NT/CT
L40	27	SEA	SPE=ON	ABB=ON	PLU=ON	L8 AND L39
L41	42	SEA	SPE=ON	ABB=ON	PLU=ON	L38 OR L40
L42	35	SEA	SPE=ON	ABB=ON	PLU=ON	L41 AND (1840-2005)/PRY,AY,PY
L43	7	SEA	SPE=ON	ABB=ON	PLU=ON	L42 AND ELECTRIC?/SC,SX
L44	29	SEA	SPE=ON	ABB=ON	PLU=ON	L33 OR L43
L45	1	SEA	SPE=ON	ABB=ON	PLU=ON	L42 AND ELECTRONIC(2A)PACKAG?
L46	29	SEA	SPE=ON	ABB=ON	PLU=ON	L44 OR L45
L47	19	SEA	SPE=ON	ABB=ON	PLU=ON	L42 AND PROC/RL
L48	44	SEA	SPE=ON	ABB=ON	PLU=ON	L46 OR L47
L49	31	SEA	SPE=ON	ABB=ON	PLU=ON	L48 AND L22
L50	44	SEA	SPE=ON	ABB=ON	PLU=ON	L48 OR L49
L51	23	SEA	SPE=ON	ABB=ON	PLU=ON	L50 AND (L9 OR L10)
L52	44	SEA	SPE=ON	ABB=ON	PLU=ON	L50 OR L51